DESQview

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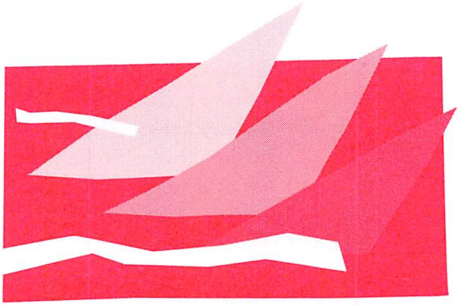

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Introduction

Welcome to DESQview™!

DESQview lets you get more power out of your computer, easily, without hassles.

If you have used your PC for more than ten minutes, you are aware of how difficult it is to finish a task without being interrupted — or without needing additional information not at hand.

DESQview gives you fast access to your programs. With DESQview you have several programs running at the same time and switch instantly between them. So, when you need quick access to information in another program, you can put the program you are using "on hold" while you get this information. You do not need to save your files and close your program before accessing information in another program.

Without DESQview, your display screen is devoted to one program—which uses the entire screen. With DESQview, you can view information from several programs at the same time—through "windows" (viewing areas). Since you control the size and location of these windows, you can view this information the way you like it.

DESQview is also **multitasking**. This means that you can have programs working for you **in background** while you continue working in a foreground program. For example, while you are writing a report with your word processor, another program could be sorting a database, printing, or communicating to a mainframe computer.

But there is more. DESQview has **virtual memory.** This means that you can have more programs open than will fit in your computer's memory. Even when your memory is full, you can open another program; DESQview then swaps a program you are not using out to your PC's hard disk, RAM disk, or even expanded memory, if you have it.

DESQview supports both text and graphics programs, including Microsoft Windows 3.x. On 8088 and 80286 PCs, graphics programs are suspended when they are in the background. However, on 386 PCs and above, when DESQview is combined with the Quarterdeck Expanded Memory Manager (we call this combination DESQview 386), the graphics programs will actually keep running in background.

With DESQview, you can transfer information from one program to another—even if the the two programs know nothing about each other. You can even reformat information as you transfer it—for example, stripping dollar signs or commas out of numbers so your spreadsheet will accept them.

DESQview Companions

DESQview also comes with three built-in DESQview Companions™:

- **DOS Services** gives you quick access to DOS. While you are still working in a program, you can display a sorted directory of your files, copy files, move files, or even format a diskette—using DESQview menus.
- **Auto Dialer** tells your PC to dial a telephone number (provided your PC has a Hayes or compatible modem installed). In any non–graphics program, just point to the phone number you want and select the Dial command, located on the Mark menu. If it is a long distance number, you can specify any of three long distance access codes.
- **Learn** tells DESQview to memorize your keystrokes as you enter them. Then, any time you want, at the push of a key, you can have DESQview type those keystrokes for you. For example, you can use Learn to type your name and address, open your favorite programs, or call a mainframe computer.

And That Is Not All

DESQview is compatible with DOS and MS Windows programs, such as Lotus 1-2-3, Paradox, Harvard Graphics, Word for Windows, Excel for Windows, Pagemaker, Quattro Pro and whatever your favorite program is. (You need to have MS Windows installed to run Windows programs.)

DESQview is for both new and experienced PC users. It is easy to use and easy to learn, yet very powerful.

All DESQview commands are in English and appear on menus. DESQview uses these menus to display your options and steps you through each command. Without DESQview, the PC user has to memorize the commands to load each program, as well as the DOS commands needed to manage files. There is no need for such memorization with DESQview.

If you have a hard disk system, DESQview will find the programs already installed on your disk, automatically install them in DESQview, and list them for you on DESQview's Open Window menu. Then, to start up a program, all you have to do is point to its name. DESQview will send all the necessary commands for you.

And when you need to use DOS commands to copy, erase, or back up files, DESQview's menus are there to assist you. That is why DESQview is a convenient tool even for the newest of PC users.

For those of you who do not like to use the keyboard, DESQview lets you use a "mouse" (pointing device). You can use the mouse for quick selection of commands on menus, for fast access to programs, for immediate repositioning and resizing of windows, and for easy marking and transferring of information between programs.

We have found that no two DESQview users use DESQview the same way. Some of you use DESQview only for fast access to programs. Some use DESQview to transfer information between programs. Some use it to access electronic mail in background. Others use it as a phone dialer. What is important is that you do not have to learn all of DESQview's features at once. You need only learn how to use DESQview menus. DESQview will lead you through the commands as you need them.

And, whenever you are uncertain about the meaning of a command or an option, DESQview's online Help is available at the touch of a key to give you a more detailed explanation—without having to reference your DESQview manual.

About This Manual

This manual introduces you to DESQview. Use it now to learn the basics of DESQview, and pick it up later to find out about specific DESQview commands and capabilities in more detail.

This manual tells you:

- ☐ How to install DESQview or DESQview 386 on your PC—**Chapter 1**.
- ☐ How to get started using DESQview by following a step-by-step tutorial—**Chapter 2.**
- ☐ How to use menus, windows, the keyboard, the mouse, the DESQview menu, and every command listed on the DESQview menu—**Chapter 3.**
- ☐ How to use the DOS Services feature to display sorted directories and perform DOS commands using DESQview menus—**Chapter 4.**
- ☐ How to use DESQview's Learn command to have DESQview memorize your keystrokes and create keystroke macros—**Chapter 5.**
- ☐ How to transfer information from program to program using DESQview's Mark, Transfer and Scissors commands—**Chapter 6.**
- ☐ How to change or fine-tune the DESQview information for programs installed in DESQview—**Chapter 7.**

You should begin with **Chapter 1**, ***Installation***, to install DESQview on your system. Then we recommend you read **Chapter 2, *Getting Started: A Tutorial***—which will take you approximately 10 minutes. When you are finished, you will know the basics of DESQview.

Chapter 3, *Using DESQview*, is intended as a reference guide. It describes how to use each DESQview command and fills in details omitted from the tutorial.

The remaining chapters discuss the details of other DESQview features—DOS Services, Learn, advanced Mark and Transfer, and Change a Program—and should be consulted on an as-needed basis.

The appendices discuss how to use the Setup program to customize DESQview to your hardware configuration and your personal preferences; how to use DESQview with expanded memory, on 386 PCs, on networks, and on floppy-based systems; provide a user's troubleshooting guide, helpful hints and a list of DESQview error messages; describe DESQview's files; review some of the technical fine-points of how DESQview interfaces with DOS; describe how to edit DESQview scripts; and summarize DESQview's Application Program Interface (API). The appendices also explain DESQview 386's powerful virtualization capability, running DESQview under DOS 5 or 6, and how to run Microsoft Windows 3.0 programs in DESQview.

DESQview is an adventure in software that can take you as far as you want to go. So—let us get started.

1

Installation

Before you can use DESQview on your system, you have to install it. This takes only a minute or two. Just follow the instructions in this chapter. Three installations are discussed:

- Hard Disk installation for DESQview, ***page 12***.
- Hard Disk installation for DESQview 386, ***page 14.***
- Floppy Diskette installation for DESQview or DESQview 386, ***page 17.***

Be sure to read the one that is appropriate for your computer. But first, please read these few introductory pages. They explain what the install program does, what hardware and operating systems are required and also what DESQview or DESQview 386 has to offer for your system and your software. Be sure that as you install DESQview or DESQview 386 on your system, you refer to the ***Installation Notes*** at the end of this chapter for additional information.

The DESQview installation program is "smart" and can detect those features of your particular computer environment which are critical to DESQview or DESQview 386 and configure DESQview or DESQview 386 for your system. It can detect whether or not you have a mouse, what kind of video adapter you have and if a VGA, whether color or monochrome. The install program will ask for confirmation for everything it finds and anything else it needs to know. It also knows from what drive you boot your computer and will create a batch file configured for your computer system and the version of DESQview or DESQview 386 you are using. If you are installing DESQview 386, it will modify your AUTOEXEC.BAT file to add Quarterdeck's Expanded Memory Manager (QEMM) to your DOS path, and modify your CONFIG.SYS file to load QEMM when you turn your computer on.

During installation, DESQview's AUTOINST program will search the hard disk on which you installed DESQview or DESQview 386 and setup (into DESQview) any programs it finds that it knows about. This includes over 125 popular software packages and a DOS window, the DESQview DOS Services and Memory Status programs, and two sample DESQview windows used by the tutorial in this manual.

After installation, please check your DESQview directory for one or more READ*.ME files. Files named READ*.ME, if present, contain information not available when the literature that came with your DESQview package went to press.

System Configuration

Before installing DESQview or DESQview 386, you should verify that DESQview can be used with your hardware and operating system configurations. In summary:

- ☐ DESQview runs on the IBM Personal Computer (PC), the IBM Personal System/2 (PS/2), and compatible systems.
- ☐ DESQview is compatible with all PC/MS-DOS versions 3 and above and DR DOS 6. DESQview requires at least 640K of memory and (minimally) needs either two high density floppy disk drives or one floppy and one hard disk drive. You need about 1MB free disk space for DESQview, and as much as 2.7MB for installation of DESQview 386. If you are installing DESQview to a floppy diskette, it must be a high capacity diskette with at least 1MB of disk space available.
- ☐ DESQview enables you to multitask if you have a 386 or i486 PC or if you have an 8088/80286 PC with an expanded memory board compatible with the Lotus/Intel/Microsoft Expanded Memory (**EMS4**) Specification, or the AST/Quadram/Ashton-Tate Enhanced Expanded Memory Specification (**EEMS**).
- ☐ If you have an expanded memory board compatible with the Lotus/Intel/Microsoft Expanded Memory Specification (**EMS 3.2**), DESQview lets you use this memory for program swapping.
- ☐ DESQview supports monochrome, color/graphics (CGA), enhanced color graphics (EGA), and Video Graphics array (VGA) display adapter boards. It also supports a monochrome display attached to a color/graphics or Hercules monochrome graphics display adapter board.
- ☐ DESQview is compatible with Microsoft and Mouse Systems mice, as well as mice having a Microsoft mouse compatible driver, and bus mice. The mouse must have been previously installed on your computer. If you have a mouse installed, DESQview installation can detect it. You can add or remove a mouse to DESQview at any time by running the Setup program (see **Appendix A**).
- ☐ DESQview supports up to four communications ports. To use DESQview's built-in Auto Dialer feature, you must have a modem attached to one of these ports and tell DESQview which port you are using (see **Appendix A**). If you have a mouse that attaches to a communications port, and you also want to use the Auto Dialer or run communications programs, you will need to install two ports, one for the mouse and one for communications. DESQview automatically optimizes its handling of communications ports unless you tell it not to (see **Appendix A**).

Printer Contention

- ☐ DESQview can manage printer contention for you, if you want (see **Appendix A**). Otherwise, you can manage it yourself by just not starting to print in one program when another program is printing.

- Other than as mentioned above, DESQview does not interfere with or otherwise manage how your programs use communications ports, printers, plotters, or other peripheral devices you may have installed on your PC. Simply configure these devices according to the requirements of the programs that use them.
- DESQview supports RAM disks, print spoolers, and disk caches.
- Most DOS programs, including Microsoft Windows, run in DESQview. The DESQview features that a program can take advantage of, however, depend upon how "well behaved" or "misbehaved" (in relation to DOS) the program is. Programs that write directly to the screen may not be able to run in small windows and in background on 8088 or 80286 PCs.
- For 8088 and 80286 PCs, DESQview does come with special "loaders" that allow specific programs to run in small windows and in background. On 386 and i486 PCs, DESQview's special 386 capabilities enable programs that write directly to the screen to run in small windows and in background without a loader. (See ***page 170*** and **Appendix K.**)

Installing DESQview on a Hard Disk (8088, 8086 and 80286 PCs)

> You must follow these installation instructions for DESQview to function properly. Just copying all the files on the DESQview diskette(s) to your hard disk is not sufficient, whether you are installing DESQview for the first time or upgrading from an earlier version.

If you boot from your hard disk, and want to install DESQview on your boot disk, you are ready to begin. (If not, see ***Note 6*** on ***page*** 22). If you are installing DESQview 386 on an 80386 or i486 computer, please turn to the next section, ***Installing DESQview 386 on a Hard Disk***, for installation instructions.

If you are upgrading a previous version of DESQview which is in the same directory, the Install program will preserve your existing configuration (*Note 2, page 21*). However, it is always a good idea to backup your current DESQview files in case of a mishap during installation.

Installing DESQview

To install DESQview:

- **Place the DESQview diskette in drive A (or other floppy drive).**
- **Type A: (or other floppy drive) and press ↵.**
- **Type INSTALL and press ↵.**

NOTE: If you have an LCD or Gas Plasma display, as on some laptops, we recommend that you run INSTALL in monochrome mode:

- **Type INSTALL/m and press ↵.**

Then follow the instructions on the screen. The Install program copies the DESQview files to your hard disk.

After DESQview is copied to the hard disk, the installation procedure searches your hard disk for all the programs it knows about and then installs these programs in DESQview. If you have a program that is not automatically installed, please refer to **Chapter 3**, ***Using DESQview, Adding a Program***. Or if you would like to auto-install programs that are on another disk drive, you can run the auto-install program, AUTOINST, any time outside of DESQview. (***Note 4, page 21***)

When installation is finished, the message DESQview installation complete appears and the DESQview Setup program starts up. Follow the instructions given.

For most of you, running DESQview's Simple Setup is sufficient. Simple Setup asks you if you wish to run DESQview in color. If you wish to change your setup later you can do so. The DESQview Setup program can be run at any time you wish.

When you have completed setting up DESQview, remove the master DESQview diskette from the floppy drive and store it in a safe place.

DESQview is now ready to go. To run DESQview, follow the instructions in *Starting Up DESQview, page 24.*

For additional information on installing DESQview, see *Installation Notes, page 21* and:

- ☐ **Appendix A,** *The DESQview Setup Program.*
- ☐ **Appendix B,** *DESQview and Memory.*
- ☐ **Appendix C,** *Using DESQview with a Network.*
- ☐ **Appendix H,** *More About What Programs Run in DESQview.*
- ☐ **Appendix L,** *Using Windows 3 in DESQview.*

Installing DESQview 386 on a Hard Disk

> You must follow these installation instructions for DESQview 386 to function properly. Just copying all the files on the DESQview 386 diskette(s) to your hard disk is not sufficient, whether you are installing DESQview 386 for the first time or upgrading from an earlier version.

This section assumes that you have purchased DESQview 386 and wish to install it on your system. However, if you already own DESQview, you can turn DESQview into DESQview 386 by purchasing the Quarterdeck Expanded Memory Manager (QEMM) for 386 PCs. Once QEMM is installed, the two programs, DESQview and QEMM, working together become DESQview 386.

The DESQview 386 Install program installs DESQview and QEMM on your hard disk. The installation process takes only a few minutes.

Installation first leads you through the installation of QEMM, and then the DESQview installation. When these are installed, your system must be rebooted before QEMM and its features are available. You also have the option to run QEMM's Optimize program to take advantage of some of the additional memory enhancing features of DESQview 386. We recommend that you let Optimize, as well as Stealth, run even if you are installing an upgrade version of DESQview 386.

The installation program also installs Manifest, Quarterdeck's comprehensive memory reporting and analysis program. Manifest describes your PC, specifically the software and hardware that use your PC's memory. In doing so, it gives you an understanding of how best to use your PC's memory.

If INSTALL finds that you are using HIMEM.SYS (DOS 5 or 6, or Windows 3.x), INSTALL asks you if you wish to remove it from the CONFIG.SYS file. Because QEMM provides the same functionality as HIMEM.SYS, we normally recommend that you remove HIMEM.SYS when running QEMM. One exception is that you may need to use the HIMEM shipped by Compaq on Compaq PCs with more than 16MB of memory. Compaq's HIMEM is necessary to access memory above the 16MB limit on Compaq systems. See ***note 7, page*** 22.

Also, INSTALL removes any other memory manager, such as DOS's EMM386, from your CONFIG.SYS file, and replaces it with QEMM.

If you have a new 386, i486 or higher PC, be sure to complete the standard installation and setup procedures of your PC before installing DESQview 386.

If you boot from your hard disk, and want to install DESQview 386 on your boot disk, you are ready to begin. (If not, see ***Note 6*** on ***page*** 22).

If you are upgrading a previous version of DESQview 386 which is in the same directory, the Install program will preserve your existing configuration (***Note 2, page 21***). However, it is always a good idea to backup your current DESQview 386 files in case of a mishap during installation.

Installing DESQview 386

To install DESQview 386 :

- **Place the DESQview 386 diskette in drive A or other floppy drive.**
- **Type A: (or log on to other floppy drive) and press ↵.**
- **Type INSTALL and press ↵.**

NOTE: If you have an LCD or Gas Plasma display, as on some laptops, we recommend that you run INSTALL in monochrome mode. To do this:

- **Type INSTALL/m and press ↵.**

Then follow the instructions on the screen. The Install program first copies the QEMM files and then the DESQview files to your hard disk.

The directory in which QEMM is installed is added to your DOS path. If you did not allow Install to reboot your system when you were asked, at the end of Install, please reboot your machine now.

DESQview 386's Optimize program scans your CONFIG.SYS and AUTOEXEC.BAT files for device drivers, TSRs and DOS resources that can be put in the upper memory area of your 80386. From its analysis, Optimize makes changes to these files to make use of this memory for you. It also makes sure you have QEMM386.SYS loaded.

If you have very large (or many) TSRs and device drivers, Optimize on its first pass may not be able to load all of them high. If this is the case, Optimize will test your system for compatibility with Stealth, a QEMM option that moves ROMs out of upper memory area addresses. If Stealth is compatible with your system, Optimize will again try to load all of your TSRs and drivers in the upper memory area. We recommend that Stealth be used, for it enables DESQview to have more memory available to run DOS programs. For more information about Optimize, please refer to the QEMM chapters, ***The Optimize Program*** and ***Stealth***.

After DESQview is copied to the hard disk, the installation procedure searches your hard disk for all the programs it knows about and then installs these programs in DESQview. If you have a program that is not automatically installed, please refer to **Chapter 3**, ***Using DESQview, Adding a Program***. Or if you would like to auto-install programs that are on another disk drive, you can run the auto-install program, AUTOINST, any time outside of DESQview. (See *Note 4, page 21*)

When installation is finished, the message DESQview installation complete appears and the DESQview Setup program starts up. Follow the instructions given.

For most of you, running DESQview's Simple Setup is sufficient. Simple Setup asks you if you wish to run DESQview in color. If you wish to change your setup later you can do so. The DESQview Setup program can be run at any time you wish.

When you have completed setting up DESQview, remove the master DESQview diskette from the floppy drive and store it in a safe place.

DESQview is now ready to go. To run DESQview, follow the instructions in *Starting Up DESQview, page 24* .

For additional information on installing DESQview, read ***Installation Notes*** at the end of this chapter and see:

- ❑ **Appendix A,** *The DESQview Setup Program,*
- ❑ **Appendix B,** *DESQview and Memory,*
- ❑ **Appendix C,** *Using DESQview with a Network,*
- ❑ **Appendix H,** *More About What Programs Run in DESQview,*
- ❑ **Appendix L,** *Using Windows 3 in DESQview.*

Installing DESQview on a Floppy-Based System

> You must follow the installation instructions given on this page for DESQview to function properly. Just making a copy of the DESQview diskette(s) is not sufficient, whether you are installing DESQview for the first time or upgrading from a previous version.

Because DESQview lets you run several programs at once, using DESQview on a floppy-based or laptop PC requires some extra planning. See **Appendix D** for suggestions on how to do this.

You must install DESQview on a system diskette, if you want to run it from the same diskette from which you boot your computer. If you are installing DESQview on a floppy diskette, the target disk drive must be at least 1.2MB (high density). DESQview 386 **cannot** be installed to floppy disks as there is not enough room for both QEMM, DESQview and the necessary files to run OPTIMIZE.

You may install from any floppy drive.

- **Place the DESQview diskette in drive A or other floppy drive.**
- **Type A: to log on to drive A (or log on to other floppy drive).**
- **Type INSTALL and press ↵.**

NOTE: If you have an LCD or Gas Plasma display, as on some laptops, we recommend that you run INSTALL in monochrome mode:

- **Type INSTALL/m and press ↵.**

Then follow the instructions on the screen. The Install program copies the DESQview files to your disk.

When installation is finished, the message "DESQview installation complete" appears and the DESQview Setup program starts up. Follow the instructions given.

For most of you, running DESQview's Simple Setup is sufficient. Simple Setup asks you if you wish to run DESQview in color. If you wish to change your setup later you can do so. The DESQview Setup program can be run at any time you wish.

When you have completed setting up DESQview, remove the master DESQview diskette(s) from the floppy drive and store it (them) in a safe place. Use the DESQview diskette you just created as your **everyday DESQview diskette.**

DESQview is now ready to go. To run DESQview, follow the instructions in *Starting Up DESQview, page 24*. Also see:

- **Appendix D,** ***Using DESQview with a Floppy-Based System.***

Setting up DESQview

The DESQview installation procedure (**INSTALL**) installs DESQview on your system and makes it operational. In doing so, it makes certain assumptions about how your system is configured and about how you would like certain DESQview options set. You can change DESQview's default assumptions at any time by running the Setup program, either from inside DESQview or from DOS. If you run Setup from inside DESQview, the new setup will not take effect until the next time you start DESQview.

When you run INSTALL, it automatically runs the Setup program for you. A menu appears asking you to choose either the simple setup procedure, for the first-time user, or the advanced setup procedure, for the experienced user. We recommend that you choose the simple procedure to get started.

The advanced setup procedure lets you set up options in nine categories:

- ☐ The **Auto Dialer** option lets you specify what port your Auto Dialer modem is attached to, what dialer protocol it uses (initally assumed to be Hayes Smartmodem protocol), and what long distance access codes you want.
- ☐ The **Colors** option lets you specify whether you want DESQview to use color and, if you do, what colors to use for DESQview windows, DESQview menus, and for programs written expressly for DESQview.
- ☐ The **Keyboard** option lets you specify whether you want DESQview's Learn feature to be available and whether you want to change the keystrokes for certain DESQview system keys. You may also chose to maintain separate shift states for each window. If you enter "Y" (Yes) for this option, DESQview will keep track of the state of the NUMLOCK, CAPS LOCK, SCROLL LOCK and PAUSE keys on a window by window basis. This can be an important feature to support certain applications which need to know the state of these keys.
- ☐ The **Mouse** option lets you specify whether you want to use a mouse with DESQview, and, if you do, whether you would like it left-handed.
- ☐ The **Network** option lets you select a network interface for either a Novell Netware IPX/SPX or a NETBIOS network.You can also add DESQview 386's peer-to-peer network support for LANtastic and NetWare Lite servers.
- ☐ The **Performance** option lets you customize the performance characteristics of DESQview to your personal needs.
- ☐ The **Swapping** option lets you disable DESQview's swapping feature and/or specify a directory where DESQview stores SWAP files if there is no expanded memory to swap to.
- ☐ The **Video** option lets you specify what type of display adapter board you have, whether text and graphics should be displayed at the same

time, and whether DESQview should blank the screen after a certain time.

- The **Window Positions** option lets you specify the nine predefined window positions used by DESQview when it opens a window or when you use the Position command.

See **Appendix A** for more information on advanced setup features.

Installation Notes

Please inspect your DESQview directory for **READ.ME** files. If one or more exists, it will contain notes which may have been inadvertantly omitted from the manual. To print a **READ.ME file**, turn your printer on and, from DOS, type: **TYPE** A:READ.ME >PRN

1 Although you can use DESQview without QEMM on a 386 or i486 PC, when you do, you lose all the advantages of the 386 PC's ability to use the virtual 86 machine architecture to emulate expanded memory—namely, breaking through the DOS 640K barrier to run as many programs as will fit in the 386 PC's memory simultaneously and letting multiple programs store data in expanded memory at the same time.

2 When you install DESQview or DESQview 386 for the first time, the install program will create a file called DV.COM, which is a copy of the file, XDV.COM. When you start DESQview or DESQview 386 by typing DV, your computer will run DV.COM which in turn runs DV.EXE. When DESQview or DESQview 386 is started up by using the file DV.COM, part of DV.EXE is loaded into expanded and/or extended memory, if you have it. This helps maximize the size of the programs you can run in DESQview. To use DV.COM, you must have expanded or extended memory in place and an expanded or extended memory manager installed.

The reason both DV.COM and XDV.COM are included is for backward compatibility with previous versions of DESQview and DESQview 386, where we had users copy XDV.COM to DV.COM themselves: If you are installing an upgrade of DESQview on the same drive and directory (or on the same diskette) as your previous version, the installation will leave your configuration as you had it so that you may start DESQview or DESQview 386 in the exact same manner as before you upgraded. If this is a new installation, you need not be concerned about either file—except perhaps for troubleshooting purposes—just type DV to start DESQview or DESQview 386 and the right file will be executed.

3 When you install DESQview on a hard disk, it creates a directory named DV and installs all DESQview's files in this directory unless you specify a different drive and/or directory when asked during installation. See **Appendix G** for specific information on the various files DESQview installs.

4 DESQview performs automatic program installation by running AUTOINST.COM. This program works in conjunction with the file DESQVIEW.DIR, which contains the information for all the programs listed on the Add a Program menu.

Part of this information is a file name that is unique for each program—when possible. AUTOINST thus performs automatic installation by searching your hard disk for the unique name of every program listed in the file, DESQVIEW.DIR.

As verification, it lists the names of the programs it finds and the directories the programs were found in. You should check this list to be sure that the correct programs have been located— because some programs do not have a genuinely unique file name to search for.

If you have several hard disk drives, the automatic program installation procedure only runs AUTOINST on the drive on which you install DESQview. You must run it on your other drives yourself. For instance, if DESQview is installed on drive C and you wish to auto-install programs on drive D, from your DESQview directory on drive C :

Type **AUTOINST D:** and press ↵.

5 Although it is not mandatory, we recommend that you allocate at least 20 file handles and 15 file buffers when you boot your system, by placing the statements:

```
FILES=20
BUFFERS=15
```

in your CONFIG.SYS file. If you use programs that open a lot of files, such as programs that sort databases, set the FILES parameter to an even larger number.

6 If you boot from a diskette (rather than from your hard disk), or if you have several hard disk drives and want to install DESQview on a different drive than the one you boot from, you must tell DESQview where it can find COMMAND.COM. DESQview will not work, and cannot be installed, unless it can find COMMAND.COM. DESQview follows the DOS environmental variable, COMSPEC.

For instance, if you boot from a diskette and want to install DESQview on hard disk drive **C**, you must set COMSPEC from DOS before starting DESQview. From the DOS prompt:

Type **SET COMSPEC=C:\**

or the drive and directory where COMMAND.COM is located.

7 The one instance in which you might leave HIMEM in the CONFIG.SYS is if your system contains more than 16 megabytes of memory, and your version of HIMEM knows how to find all the memory even though the system does not report it through standard BIOS calls (Compaqs with over 16MB of RAM are the most notable examples).

In this case, HIMEM should be loaded before QEMM386.SYS, which can allocate all the system's memory from HIMEM. If you have a Compaq with over 16MB of RAM, use the HIMEM.EXE driver provided by Compaq and be sure to add the /ABOVE16 parameter to the device driver line. If you have MS-DOS 6, you can alternatively use DOS's HIMEM.SYS without a parameter. Without such a version of HIMEM, QEMM will only find all the memory on the system if you add the USERAM=xxxx-yyyy parameter with an appropriate address range to the QEMM386.SYS line in CONFIG.SYS.

2

Getting Started: A Tutorial

Now that you have installed DESQview on your system, take ten minutes to learn how to use it. We suggest you follow the steps in this chapter, ***Getting Started: A Tutorial***, to learn how to use DESQview's major features for yourself. You will learn:

- How to start up DESQview from either a floppy-based or hard disk system.
- How to use the keyboard or the mouse to execute DESQview commands.
- How to use the Open Window command to open DESQview windows and run your programs in those windows.
- How to use the Switch Windows command to switch between programs.
- How to use the Rearrange command to move and resize a window.
- How to use the Zoom command to zoom (enlarge) a window to full screen, or shrink it back to its previous size and position.
- How to use the Add a Program command to add a program to DESQview's Open Window menu.
- How to use the Help command to get immediate assistance for a particular DESQview command or feature.
- How to use the Close Window command to close programs.
- How to use the Quit DESQview command to exit from DESQview and return control to DOS.

These are the basics of DESQview. But there is lots more you can do. You can use the auto dialer to dial phone numbers. You can use the Mark and Transfer commands to transfer columns of numbers into spreadsheets or disjoint pieces of information into databases. You can use the Learn command to record a series of your keystrokes as a keystroke macro.

These are just some of DESQview's many advanced features, which are covered in later chapters. Once you have completed ***Getting Started: A Tutorial***, you can read about the advanced features as you need them.

Have fun!

Starting Up DESQview

The commands you use to start up DESQview depend on whether you have a floppy-based or hard disk system.

Starting Up DESQview on a Hard Disk System

If you have a hard disk system:

- **Type DV and press ↵.**

The DESQview copyright notice appears on your screen for a moment, then the DESQview menu appears. DESQview is now ready for your commands.

The DESQview installation procedure automatically creates a batch file named **DV.BAT** in the root directory of your hard disk. So, if your **PATH** command includes the root directory (**PATH C:\**), you can start DESQview just by typing **DV** and pressing ↵.

Starting Up DESQview on a Floppy-Based System

If you have a floppy-based system, follow these steps:

- **Place your everyday DESQview diskette in drive B.**
- **Type B: and press ↵.**
- **Type DV and press ↵.**

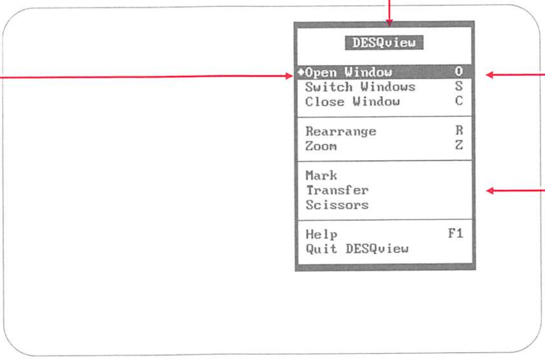
The DESQview copyright notice appears on your screen for a moment, then the DESQview menu appears. DESQview is now ready for your commands.

NOTES:

- *Your* ***everyday DESQview diskette*** *is the copy you made when you installed DESQview.*
- *It is important to set the default drive to B before starting up DESQview. This is where DESQview looks for the files it needs.*
- *Once you start up DESQview, you may use drive B for data. However, you must have your everyday DESQview diskette in drive B to open a window, to get online Help, to use DOS Services, to add, delete, or change a program, and to quit DESQview.*
- *If you have a laptop PC, or other type of PC, with high-capacity floppy drives, and you have followed the instructions in* **Appendix D, *Using DESQview with a Floppy-Based System***, *to optimize your diskette configuration for DESQview, you start up DESQview from drive A rather than drive B.*

Using the Keyboard or the Mouse

When you start DESQview, the screen clears, the DESQview menu appears, and DESQview is ready to accept your commands.



The **DESQview menu** is the master list of DESQview commands.

The **menu cursor**—a reverse video bar—indicates an entry that can be selected. You move it using the arrow keys or the mouse.

A **missing letter** indicates that the command is not currently available. (You cannot move the menu cursor onto such a line).

The **mouse cursor**—a diamond—appears if you have installed a mouse.

Selecting a Command Using the Keyboard

To select a command using the keyboard:

- **Type the letter to the right of the command you want. (A missing letter indicates the command is not currently available.)**

Selecting a Command Using the Mouse

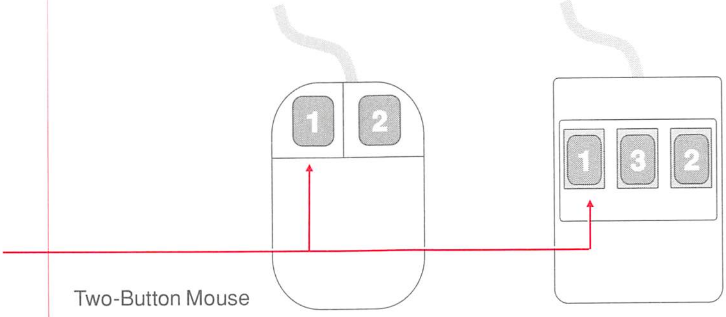
To select a command using the mouse:

- **Move the mouse until the menu cursor is on the command you want. Then click (press and release) the select (left-most) mouse button.**

The mouse and keyboard can be used interchangeably. You can perform part of an operation with the keyboard and part with the mouse.

The term **click** is important in DESQview. It means:

- **Position the mouse cursor on the item to be selected.**
- **Press and release button 1—the select button.**



The **select button** is used to select the command (or other item) pointed to by the mouse cursor.

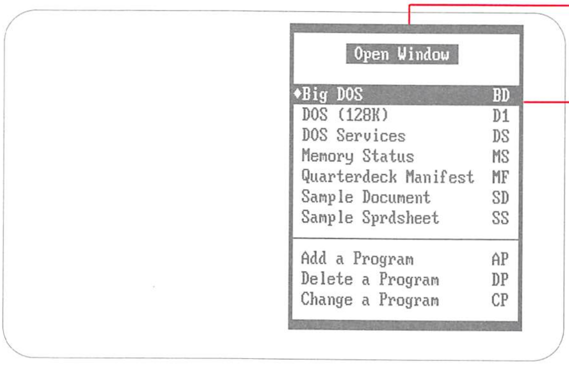
Two-Button Mouse

Three-Button Mouse

Running a Program

To run a program in DESQview, you use the Open Window command:

- Select **Open Window** from the DESQview menu using the keyboard or the mouse:
  - Using the keyboard, type the letter **O**.
  - Using the mouse, click on the **Open Window** line.



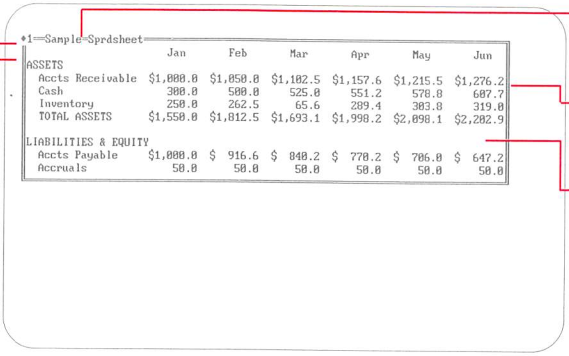
The **Open Window menu** lists all the programs you have setup in DESQview, plus the commands for adding, deleting and changing programs.

The menu cursor and the mouse cursor both appear on the first selectable entry on the menu.

The Open Window menu that appears is customized to your system. It contains the programs shown above **plus** all the other programs on your hard disk that DESQview knows about—which is most popular programs. (If you do not have a hard disk, only these programs appear.) Let us start up **Sample Spreadsheet:**

- Select **Sample Spreadsheet.**

A window appears in the top half of the screen. The program's name—**Sample Spreadsheet**—appears in the top frame bar, preceded by the window number—**1**. Then, after a moment, the text of **Sample Spreadsheet** appears in the window.



```
♦1═Sample═Sprdsheet═══════════════════════════════════════════════════
                      Jan       Feb       Mar       Apr       May       Jun
ASSETS
  Accts Receivable  $1,000.0  $1,050.0  $1,102.5  $1,157.6  $1,215.5  $1,276.2
  Cash                 300.0     500.0     525.0     551.2     578.8     607.7
  Inventory            250.0     262.5      65.6     289.4     303.8     319.0
  TOTAL ASSETS      $1,550.0  $1,812.5  $1,693.1  $1,998.2  $2,098.1  $2,202.9

LIABILITIES & EQUITY
  Accts Payable     $1,000.0  $  916.6  $  840.2  $  770.2  $  706.0  $  647.2
  Accruals              50.0      50.0      50.0      50.0      50.0      50.0
```

The **window number** identifies the window for the purpose of switching windows.

The typing cursor appears wherever the program running in the window places it.

The **window name** is the name of the program running in the window.

The **window frame** defines the window's boundaries.

The **window contents** are whatever the program writes to the screen.

Displaying the DESQview Menu

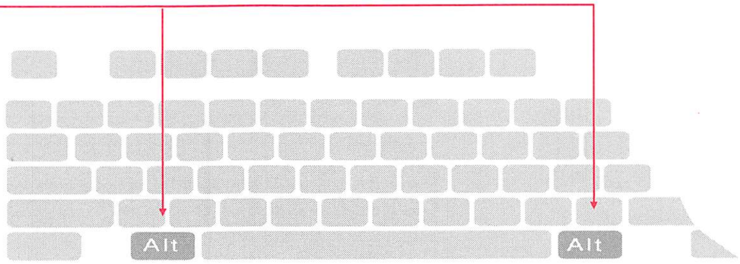
Whenever you want to start up another program, move or resize a window, mark and transfer information from one program to another, or use any of the other DESQview features, you start by displaying the DESQview menu.

Using the Keyboard

To display the DESQview menu using the keyboard:

- **Press and release the Alt key.**

DESQview uses the Alt key like all other keys—you press it down and release it, just as you would for the "A" key. When the Alt key is used in this manner, we call it the **DESQ key**. To remind you of this usage, we ask you to **tap** the DESQ key, rather than to press or type it.



Tap the **DESQ key** to get DESQview's attention and display the DESQview menu.

PC Keyboard

Using the Mouse

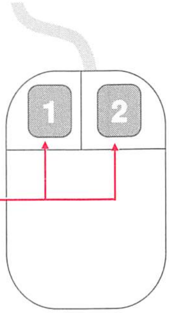
To display the DESQview menu using the mouse:

- **Click button 3 (on a three-button mouse) or click both buttons simultaneously (on a two-button mouse).**

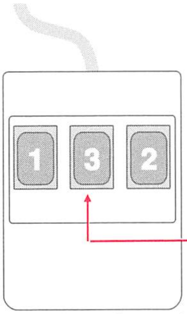
When we use the term **click the DESQ button,** use the method appropriate to the type of mouse you have.

NOTE: If the program in the window uses a mouse, you must tap the DESQ key to display the DESQview menu.

Click both buttons simultaneously to get DESQview's attention and display the DESQview menu.



Two-Button Mouse



Three-Button Mouse

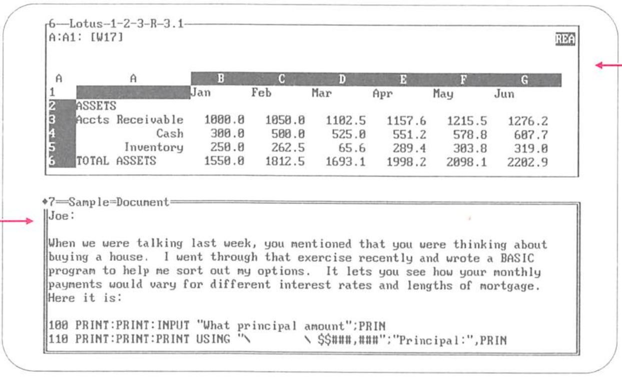
Click the **DESQ button** to get DESQview's attention and display the DESQview menu.

Running a Second Program

Now let us run another program—**Sample Document:**

- **First, check if the DESQview menu is displayed. If it is not, tap the DESQ key or click the DESQ button on the mouse to display it.**
- **Select Open Window to display the Open Window menu.**
- **Select Sample Document.**

A new window—window 2—appears in the bottom half of the screen. Notice that the frame around window 2—**Sample Document**— consists of a double line and that the frame around **Sample Spreadsheet** has changed to a single line.



```
6—Lotus-1-2-3-R-3.1
A:A1: [W17]                                                              REA

A          A            B         C         D         E         F         G
1                     Jan       Feb       Mar       Apr       May       Jun
2  ASSETS
3  Accts Receivable    1000.0    1050.0    1102.5    1157.6    1215.5    1276.2
4              Cash     300.0     500.0     525.0     551.2     578.8     607.7
5         Inventory     250.0     262.5      65.6     289.4     303.8     319.0
6  TOTAL ASSETS        1550.0    1812.5    1693.1    1998.2    2098.1    2202.9
```

```
♦7=Sample=Document
Joe:

When we were talking last week, you mentioned that you were thinking about
buying a house.  I went through that exercise recently and wrote a BASIC
program to help me sort out my options.  It lets you see how your monthly
payments would vary for different interest rates and lengths of mortgage.
Here it is:

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\          \ $$###,###";"Principal:",PRIN
```

The **background windows** are all other windows on the screen (or hidden). Their frames consist of a single line.

The **current window** is the window you're working on. It is distinguished from the other windows by having a frame that consists of a double line.

You can only type in one window at a time.† This is the **window you are working on.** It is also called the **current window** or the **foreground window**. In DESQview all three terms mean the same. The current window is distinguished by having a frame that consists of a double line.

All other windows are called **background windows.** Their frames consist of a single line. If you want to work in another window, you must switch to it. Let us make **Sample Spreadsheet** the current window.

To switch to **Sample Spreadsheet**—window 1—using the keyboard:

- **Tap the DESQ key to display the DESQview menu, then type 1.**

To switch to **Sample Spreadsheet** using the mouse:

- **Click on any visible part of window 1, including anywhere on its frame.**

When you switch windows, the mouse and typing cursors move to their last positions in the window you switched to—**Sample Spreadsheet** in this case. Any operation that was in progress in the window switched away from continues. This is called **running in background.**

---

† You cannot type into the sample spreadsheet or document—they are for tutorial purposes only.

Working with Windows

Windows are your view into the programs running in DESQview. They are of two types:

- A **full-screen window** occupies the full screen. It has no frame and looks no different from what you see when you run the program outside of DESQview, under DOS.
- A **small window** occupies less than the full screen. It has a double or single-line frame, depending on whether it is the current window or a background window.

To give you flexibility in working with your programs, you can change several aspects of each program's window:

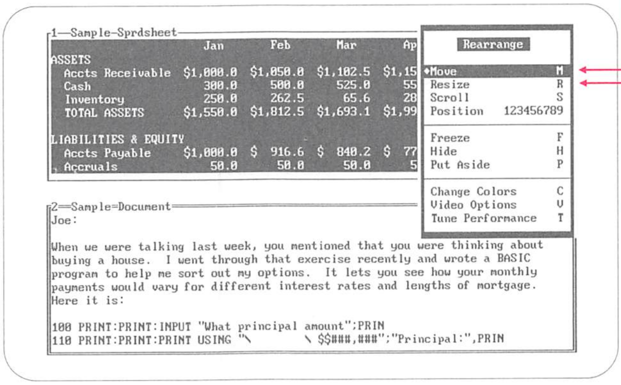
- If it is a small window, you can change its size and position on the screen or scroll its contents. Also, you can zoom (enlarge) it to full-screen or, if it's already full-screen, shrink it back to a small window.
- If you have a color display, you can change its colors.
- If you want to suspend processing in the window, you can freeze it. If the window is in your way, you can hide it. Or, if you want to run another program, but do not have enough memory, you can put the program aside to disk, RAM disk, or expanded memory to free up memory.

All these actions are performed on the current window. Since **Sample Spreadsheet** is now the current window, let us change its size and position.

Moving and Resizing the Current Window Using the Keyboard

To move or resize the current window using the keyboard:

- **Tap the DESQ key to display the DESQview menu.**
- **Type R to display the Rearrange menu.**



```
1—Sample-Sprdsheet—
                        Jan        Feb        Mar      Ap
ASSETS
  Accts Receivable  $1,000.0   $1,050.0   $1,102.5   $1,15
  Cash                 300.0      500.0      525.0     55
  Inventory            250.0      262.5       65.6     28
  TOTAL ASSETS      $1,550.0   $1,812.5   $1,693.1   $1,99

LIABILITIES & EQUITY
  Accts Payable     $1,000.0   $  916.6   $  840.2   $  77
  Accruals              50.0       50.0       50.0      5

2=Sample=Document=
Joe:

When we were talking last week, you mentioned that you were thinking about
buying a house.  I went through that exercise recently and wrote a BASIC
program to help me sort out my options.  It lets you see how your monthly
payments would vary for different interest rates and lengths of mortgage.
Here it is:

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\        \ $$###,###";"Principal:",PRIN
```

Selecting **Move** lets you slide the current window around the screen. (But you cannot move any part of it off the screen).

Selecting **Resize** lets you stretch or shrink the current window. The top-left corner remains anchored.

- **Type M if you want to move the window or R if you want to resize it.**

The Move or Resize menu appears, depending on which action you choose. That action is highlighted on the menu.

- **Use the four arrow keys to move or resize the window.**

If you have chosen Move, the window will move in the corresponding direction whenever you press an arrow key. (However, you cannot move any part of the window off the screen.) If you have chosen Resize, the window will stretch or shrink in the corresponding direction. You can alternate between moving and resizing any time you want:

- **If you are moving and want to resize, type R. If you are resizing and want to move, type M.**

When the window is positioned and sized the way you want:

- **Press ↵ (Done) to finish the command.**

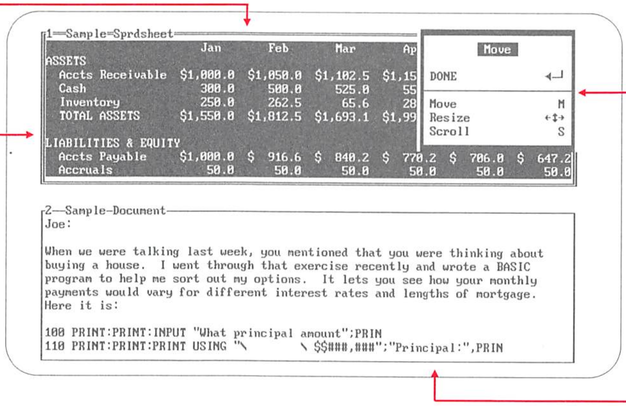
Before continuing, use Move and Resize again to put **Sample Spreadsheet** back in the top half of the screen.

Moving and Resizing the Current Window Using the Mouse.

If you are using a mouse, you can move and resize the current window without displaying the DESQview or Rearrange menus:

- **To initiate a Move, click anywhere on the top bar of the window frame. To initiate a Resize, click anywhere on the bottom bar.**
- **Move the mouse. As you do, the window will move around the screen (for Move) or stretch or shrink (for Resize).**
- **To alternate between moving and resizing, click twice.**

NOTE: While the Move or Resize menu is displayed, there is no mouse or typing cursor.



```
1══Sample═Sprdsheet══════════════
                        Jan        Feb        Mar      Ap
ASSETS
  Accts Receivable  $1,000.0   $1,050.0   $1,102.5   $1,15
  Cash                 300.0      500.0      525.0      55
  Inventory            250.0      262.5       65.6      28
  TOTAL ASSETS      $1,550.0   $1,812.5   $1,693.1   $1,99

LIABILITIES & EQUITY
  Accts Payable     $1,000.0  $  916.6  $  840.2  $  770.2  $  706.0  $  647.2
  Accruals              50.0      50.0      50.0      50.0      50.0      50.0
```

```
2──Sample-Document──────────────────
Joe:

When we were talking last week, you mentioned that you were thinking about
buying a house.  I went through that exercise recently and wrote a BASIC
program to help me sort out my options.  It lets you see how your monthly
payments would vary for different interest rates and lengths of mortgage.
Here it is:

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\        \ $$###,###";"Principal:",PRIN
```

Clicking on the **top** frame lets you **move** the window.

Clicking on the **left** frame lets you **mark** the contents of the window.

Clicking on the **right** frame lets you **scroll** the contents of the window.

Clicking on the **bottom** frame lets you **resize** the window.

When the window is positioned and sized the way you want:

- **Click once to bring the menu cursor back onto the Move or Resize menu.**
- **Click anywhere in the current window—Sample Spreadsheet. (Or, if you prefer, click on DONE. Both actions have the same effect).**

Before continuing, use Move and Resize again to put **Sample Spreadsheet** back in the top half of the screen.

Zooming and Unzooming the Current Window

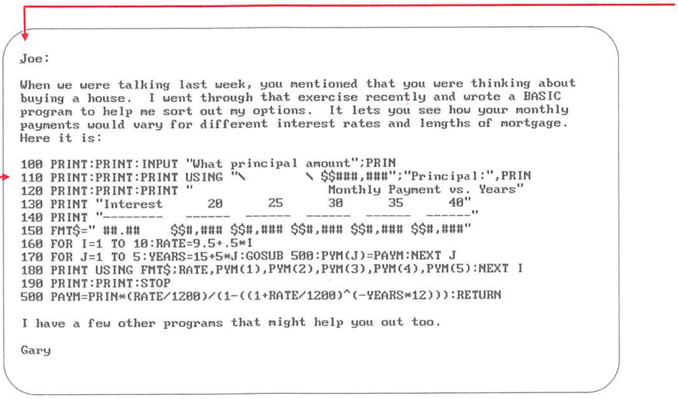
Running a program in a small window is not always convenient, so DESQview lets you quickly zoom (enlarge) programs in small windows to full screen.

Zoom works on the current window. Let us zoom **Sample Document.** First, we have to make it the current window:

- **Tap the DESQ key to display the DESQview menu, then type 2.**

Now, let us zoom **Sample Document** to full screen.

- **Tap the DESQ key or click the DESQ button on the mouse to display the DESQview menu.**
- **Select Zoom.**



```
Joe:

When we were talking last week, you mentioned that you were thinking about
buying a house.  I went through that exercise recently and wrote a BASIC
program to help me sort out my options.  It lets you see how your monthly
payments would vary for different interest rates and lengths of mortgage.
Here it is:

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\         \ $$###,###";"Principal:",PRIN
120 PRINT:PRINT:PRINT "                        Monthly Payment vs. Years"
130 PRINT "Interest      20       25       30       35       40"
140 PRINT "--------    ------   ------   ------   ------   ------"
150 FMT$=" ##.##     $$#,### $$#,### $$#,### $$#,### $$#,###"
160 FOR I=1 TO 10:RATE=9.5+.5*I
170 FOR J=1 TO 5:YEARS=15+5*J:GOSUB 500:PYM(J)=PAYM:NEXT J
180 PRINT USING FMT$;RATE,PYM(1),PYM(2),PYM(3),PYM(4),PYM(5):NEXT I
190 PRINT:PRINT:STOP
500 PAYM=PRIN*(RATE/1200)/(1-((1+RATE/1200)^(-YEARS*12))):RETURN

I have a few other programs that might help you out too.

Gary
```

The mouse and typing cursors appear in their last positions in the window—in this case the top-left corner.

A **full-screen window** has no frame or other distinguishing characteristics.

If you use the Zoom command when a window is already full-screen, it shrinks back to a small window (if it was previously in a small window). Let us restore **Sample Document** to its previous size and position:

- **Display the DESQview menu.**
- **Select Zoom.**

There are two types of programs: those that can run in a small window and those that cannot. If a program cannot run in a small window, it is said to be **full-screen-only.** When you put a full-screen-only program in a small window, it is suspended.

Adding a Program to DESQview

Now that you have run and manipulated two programs in DESQview, it is time to try adding your own program.

Before a program can run in DESQview, you have to tell DESQview a little about the program—such as where it is stored on disk, its name, the DOS command that starts it up and how much memory it needs. To make this as easy as possible, DESQview comes with the necessary information already set up for many popular programs. All you need do is tell DESQview which programs you want to use. If the program you want is not one of these, it takes only a few moments to supply the information yourself.

The program we will add is **DESQview Setup.** We have chosen **DESQview Setup** because it is a real program (unlike the sample programs you have used so far) and because all of you have it. It comes with DESQview. To add most programs, there are two steps:

- ❑ First, you must install the program on your computer. In this case, however, Install has copied DESQview Setup to your DESQview directory, and no further installation of the program itself is needed.
- ❑ Second, you must tell DESQview to add the program to the Open Window menu.

Adding DESQview Setup to DESQview

To tell DESQview to add **DESQview Setup** to the list of programs on the Open Window menu:

- **Tap the DESQ key or click the DESQ button on the mouse to display the DESQview menu.**
- **Select Open Window to display the Open Window menu.**

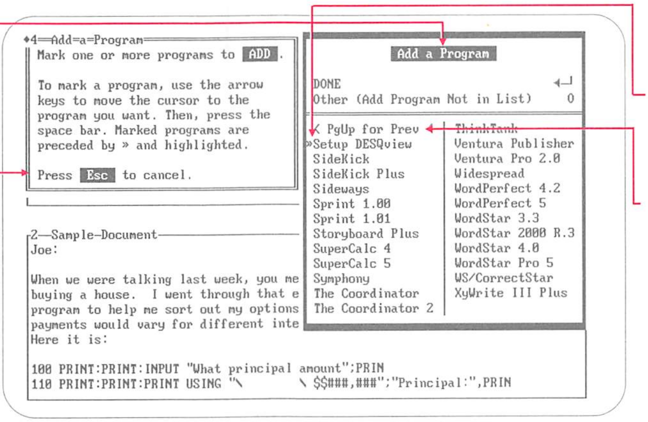
If you are using a floppy-based system, check that your everyday DESQview diskette is in drive B. (If you have a hard disk system, you need do nothing.)

- **Select Add a Program.**

Add a Program is itself a DESQview program, and takes a moment to load. Then the Add a Program menu appears along with instructions telling you how to mark programs.

The **Add a Program** menu lists all the programs that DESQview knows about.

The **message window** explains how to mark the programs you want to add to DESQview.



```
♦4══Add═a═Program══════════════════════
 Mark one or more programs to  ADD .

 To mark a program, use the arrow
 keys to move the cursor to the
 program you want. Then, press the
 space bar. Marked programs are
 preceded by » and highlighted.

 Press  Esc  to cancel.
```

```
            Add a Program

DONE                               ←┘
Other (Add Program Not in List)     0

< PgUp for Prev     ThinkTank
»Setup DESQview     Ventura Publisher
 SideKick           Ventura Pro 2.0
 SideKick Plus      Widespread
 Sideways           WordPerfect 4.2
 Sprint 1.00        WordPerfect 5
 Sprint 1.01        WordStar 3.3
 Storyboard Plus    WordStar 2000 R.3
 SuperCalc 4        WordStar 4.0
 SuperCalc 5        WordStar Pro 5
 Symphony           WS/CorrectStar
 The Coordinator    XyWrite III Plus
 The Coordinator 2
```

```
2—Sample-Document──────────────────────
Joe:

When we were talking last week, you me
buying a house.  I went through that e
program to help me sort out my options
payments would vary for different inte
Here it is:

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\        \ $$###,###";"Principal:",PRIN
```

A **marked name** is preceded by »

The **PgUp** and **PgDn** keys indicate there are additional programs available. Setup DESQview is on the last page of programs. Press PgUp to see more of the list.

To mark **DESQview Setup** using the keyboard:

- **Use the PgDn and arrow keys to move the menu cursor to the Setup DESQview entry.**
- **Press the spacebar.**

To mark **Setup DESQview** using the mouse:

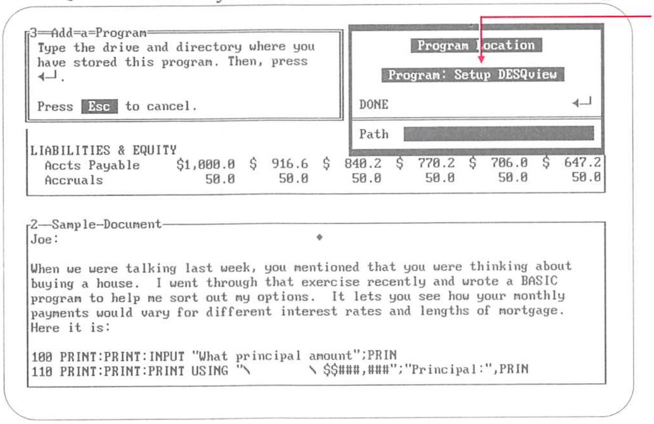
- **Click on PgDn for More to find Setup DESQview and click on the Setup DESQview item.**

The **Setup DESQview** entry is preceded by » and highlighted —indicating it is marked.

If you wanted to add other programs at this time, you would follow the same procedure to mark additional names. If you make a mistake and mark the wrong name, highlight it, then press the spacebar again to deselect it.

- **Select DONE.**

A new menu appears—the Program Location menu. It asks you to tell DESQview where you have stored **DESQview Setup.**



```
3══Add═a═Program══════════════════════
 Type the drive and directory where you
 have stored this program. Then, press
 ←┘.

 Press  Esc  to cancel.
```

```
        Program Location

    Program: Setup DESQview

DONE                            ←┘

Path
```

```
LIABILITIES & EQUITY
  Accts Payable      $1,000.0  $  916.6  $  840.2  $  770.2  $  706.0  $  647.2
  Accruals               50.0      50.0      50.0      50.0      50.0      50.0
```

```
2—Sample-Document───────────────────────────────────────────────────
Joe:                                           ♦

When we were talking last week, you mentioned that you were thinking about
buying a house.  I went through that exercise recently and wrote a BASIC
program to help me sort out my options.  It lets you see how your monthly
payments would vary for different interest rates and lengths of mortgage.
Here it is:

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\        \ $$###,###";"Principal:",PRIN
```

The **Program Location** menu lets you specify where on disk you have stored the program being added—on diskette or in a directory on your hard disk.

- **Type the drive and directory where DESQview Setup is stored. For example, type C:\DV if DESQview Setup is stored in the \DV directory of drive C, (where install copied it).**
- **Select DONE.**

The Program Location menu disappears and **DESQview Setup** is installed. Then a menu appears asking if you want to add any more programs to DESQview at this time. Since you do not:

- **Select DONE.**

Opening a DESQview Setup Window

Now let us run **DESQview Setup.**

- **Display the DESQview menu and select Open Window.**

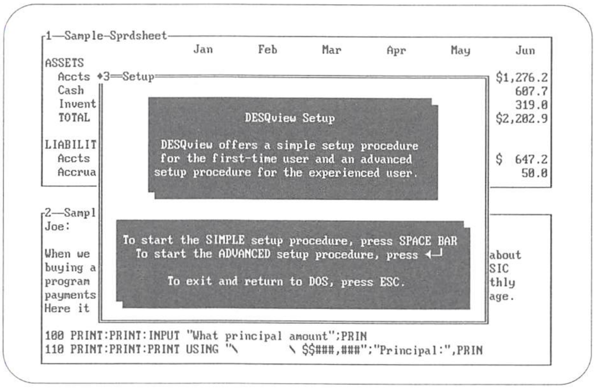
Notice that now **DESQview Setup** appears in the list in alphabetical order.

- **If DESQview Setup is stored on a floppy diskette, place that diskette in drive A. (If DESQview Setup is on your hard disk, you need do nothing.)**

Then, open a **DESQview Setup** window:

- **Select DESQview Setup.**

DESQview Setup is now running on your system.



```
1—Sample-Sprdsheet
                          Jan        Feb        Mar        Apr        May        Jun
ASSETS
  Accts ♦3═Setup                                                               $1,276.2
  Cash                                                                            607.7
  Invent                                                                          319.0
  TOTAL                      DESQview Setup                                    $2,202.9

LIABILIT           DESQview offers a simple setup procedure
  Accts            for the first-time user and an advanced                     $  647.2
  Accrua           setup procedure for the experienced user.                       50.0

2—Sampl
Joe:
             To start the SIMPLE setup procedure, press SPACE BAR
When we        To start the ADVANCED setup procedure, press ◄┘                 about
buying a                                                                       SIC
program              To exit and return to DOS, press ESC.                     thly
payments                                                                       age.
Here it

100 PRINT:PRINT:INPUT "What principal amount";PRIN
110 PRINT:PRINT:PRINT USING "\         \ $$###,###";"Principal:",PRIN
```

Now, let us move the **DESQview Setup** window to the top half of the screen, using the Position command shortcut:

- **Display the DESQview menu and select Rearrange.**
- **Type 1 to select position 1.**

See *page 78* for a picture of what portion of the screen positions 1 to 9 select.

Getting Help

You have just learned the basics of DESQview. You know how to start up DESQview, open programs, switch between programs, move and resize windows, zoom and unzoom windows and add new programs to DESQview. DESQview has more features that we will let you discover on your own:

- ❑ You can have a program continue to work for you in background while you are working (in foreground) on another program.
- ❑ You can change a window's colors, or the colors of DESQview menus.
- ❑ You can put a program aside to disk, RAM disk, or expanded memory to free up space. This feature (called **virtual memory**) allows you to have more programs open than will actually fit in memory at the same time.
- ❑ You can mark and transfer information between DESQview windows. For example, you could transfer the fields from a set of dBASE records into columns of a 1-2-3 spreadsheet.
- ❑ You can change the information about programs installed in DESQview, delete programs, or add new ones—even ones unknown to DESQview.
- ❑ You can use DESQview's DOS Services to simplify managing your files.
- ❑ You can use DESQview's Auto Dialer feature to dial your phone for you, if you have a modem.
- ❑ You can use DESQview's Learn feature to create scripts (keystroke macros) for a particular program or global scripts that work anywhere. DESQview automatically saves and loads these scripts for you.

To find out more about these and other DESQview features, there is online Help to assist you. To get Help:

- **Tap the DESQ key or click the DESQ button on the mouse to display the DESQview menu.**
- **Press F1 or click on Help for DESQview to display the main Help index.**

The currently selected topic is indicated by a brown box[†]. Other available topics are shown in green boxes. To select a topic of interest:

- **Use the arrow keys to move the brown box to the topic you want and press the spacebar, or click on the topic.**

When you are finished reading Help:

- **Press Esc or click on Esc to end Help.**

[†] On a monochrome display, available topics are shown in reverse video boxes and the selected topic is shown as highlighted text.

Quitting DESQview

One more basic DESQview operation that you need to know is how to quit DESQview. There are two steps. First, you must close down all your programs and, second, you must issue the Quit DESQview command.

Closing Down Your Programs

To close down your programs, you perform the Close Window command on each program in turn:

- For programs that have their own quit command, quitting the program in the usual way will normally close the program. You should always use the program's own quit command rather than closing the DESQview window.

- **First, before using Close Window on a program, be sure you save the file(s) you have been working on. Do this as you would normally for the program outside of DESQview.**

Since you have been working only on sample documents, there are no files to save this time. So, let us close down the current window, **DESQview Setup:**

- **Tap the DESQ key or click the DESQ button on the mouse to display the DESQview menu—if it is not displayed already.**

- **Select Close Window.**

The Close Window menu appears, asking you to confirm that you really want to close down the current window:

- **Select Yes to indicate that you do.**

Now the current window is **Sample Document**, so repeat these steps to close it. Finally, repeat these steps a third time to close Sample Spreadsheet.

Another way to close down a program's window—for most programs—is to terminate the program normally, the way you do outside of DESQview. Usually this closes the program's window as well. If closing the program does not close the DESQview window, type EXIT in the window to close it down.

Returning Control to DOS

When all of your windows are closed, you are ready to quit DESQview and return control to DOS:

- **Tap the DESQ key or click the DESQ button on the mouse to redisplay the DESQview menu.**

- **Select Quit DESQview.**

The Quit DESQview menu appears, asking you to confirm that you really want to terminate DESQview.

- **Select Yes to indicate that you do.**

If you quit DESQview before closing down your windows, your programs will be closed down without saving the file(s) you have been working on. Also, if the program in the window is one that creates temporary files while running and erases them when quit normally, if you close the DESQview window, the temporary files will not be erased.

Notes:

3

Using DESQview

This chapter is the reference guide for DESQview. It describes the fundamental concepts of DESQview and gives a complete explanation of all DESQview's commands and features—or directs you to additional features in later chapters. Before reading this chapter, we suggest you read **Chapter 2,** ***Getting Started: A Tutorial***, to become acquainted with the basic features of DESQview. In this chapter you will learn:

- About the characteristics of a DESQview menu.
- How windows are defined and used.
- About the keys that have special meaning in DESQview.
- How the mouse is used in DESQview.
- About the meanings of the commands on the DESQview menu.
- How to start up and close down programs in DESQview.
- How to switch between programs—when you have several programs running at the same time.
- How to change the size, position, and color of a window, or how to hide a window, freeze a window, or put the program running in a window aside to disk, RAM disk, or expanded memory.
- How to tune performance.
- How to change the number of lines displayed on the screen (video options).
- How to work with full-screen and graphics windows in DESQview.
- How to mark and transfer information from one program to another.
- How to get online Help for DESQview commands.
- How to install a program in DESQview, how to delete a program that is already installed, and how to change the basic information DESQview uses to run a program.
- How to use the Auto Dialer to dial your phone.

Additional DESQview features are discussed in **Chapters 4** through **7**:

- **Chapter 4** describes how to use the DOS Services program to display sorted directories and perform DOS commands using DESQview menus.
- **Chapter 5** describes how to use DESQview's Learn command to have DESQview memorize your keystokes and create keystroke macros.
- **Chapter 6** describes the more advanced features of DESQview's Mark and Transfer commands and DESQview's Scissors command.
- **Chapter 7** describes how to change the program information used by DESQview to fine tune how your programs run in DESQview.

Menus

A DESQview menu lists the commands, options, and fill-in fields available to you to complete a particular DESQview operation.

You activate a command, or turn an option ON or OFF, either by pressing the key or keys listed to the right of the command name or by clicking on the menu line containing the command.

An alternate way to select a command or option is to use the arrow keys to position the cursor on the desired entry, then press the spacebar.

The Enter key, sometimes represented as ↵, is designated as the **START** or the **DONE** key on some DESQview menus. For this reason, it is not a good idea to get into the habit of using ↵ to select DESQview menu items.

Commands

Commands always appear first on a menu. Each menu has at least one command.

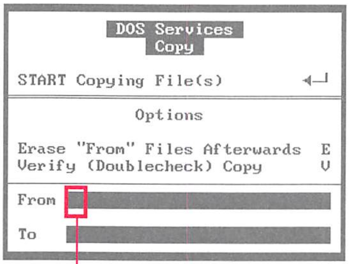
Often, command groups are separated by bars to help you find a command more easily.

If options or fill-in fields appear on the menu, they are separated from commands by a double bar.

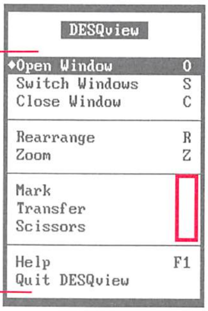
The first command is often **DONE** or **START.** Selecting this command performs the operation. You should complete the information in the menu's fill-in fields and set the options ON or OFF, as you require, before selecting **DONE** or **START.**

When you select a command, DESQview remembers the line the menu cursor was on and automatically puts the menu cursor back on that line the next time you display the menu.

A **command** specifies an action to perform.



The **typing cursor** appears if the menu has fill-in fields. What you type appears at the cursor position—if it is inside a field.



The **menu cursor**—a reverse video bar—indicates that an entry can be selected. You move it using the arrow keys or the mouse.

A **missing key** indicates that the command or option is not currently available. (You cannot move the menu cursor onto such a line.)

Options

An option is a switch—that is, it is either ON or OFF, like a light switch.

When an option is ON, it is preceded by » and highlighted. Being ON means that the action or function specified by the option will be performed as part of the operation.

When an option is OFF, it is not preceded by » and not highlighted. Being OFF means, in general, that the action specified by the option will not be performed, or, sometimes OFF means that the opposite of the ON action will be performed.

Some options are specified by using fill-in fields rather than switches. In these cases, turn the option ON by entering **Y** for "Yes" (ON) or **N** for "No" (OFF) into the fill-in field.

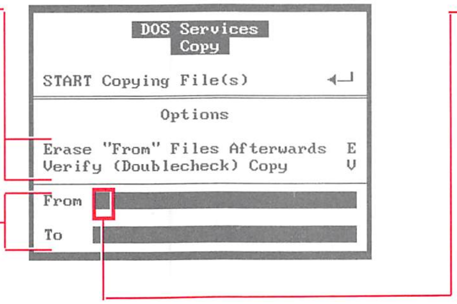
Fill-In Fields

A fill-in field is an area of the menu where you can type information, when a command needs variable information that only you can supply—such as a file name.

Before you can type in a fill-in field, the typing cursor must be in the field. When a menu that has a fill-in field is displayed, the typing cursor is automatically placed in the field—or in the first field if there are several.

When a menu has multiple fill-in fields, press Tab or use the arrow keys to move between them, or click on the desired field.

When the information in the fill-in fields is complete, select **DONE** or **START** to perform the action specified by the command.



An **option** is an ON/OFF switch that specifies an action to be taken (or not taken) when you perform the command action.

A **fill-in field** provides a place for you to type in variable information.

The **typing cursor** appears if the menu has fill-in fields. What you type appears at the cursor position—if it is inside a field.

Windows

When you are not running DESQview, you run only one program at a time. Your view of that program is through your display screen, which is 25 lines by 80 characters. DESQview calls even this view of your program a window.

Windows can be as large as a full screen (25x80)† or as small as one line by one character. You determine how big or small a window is, how many windows are open at one time, and where the windows are positioned on the screen. A full-screen DESQview window looks no different from what you see when you run a single program under DOS on your computer. It has no distinguishing characteristics.

The purpose of having smaller windows is to be able to view several programs at the same time. In order to distinguish information in one window from that in another, all windows smaller than a full-screen have frames.

When you run a program in a full-screen window or in a small window, the program is unchanged. You use the same program commands as you do when the program is not running in DESQview.

You can have up to 255 windows open at one time, memory permitting.

Identifying the Current Window

DESQview assigns each window a number and a name, which are displayed in the window's top frame bar.

DESQview calls the window in which you are currently working the **current window** or **foreground window.**

When you have several small windows open, you can distinguish the current one by its frame—a double line. The frames of noncurrent windows consist of a single line.

Noncurrent windows are said to be **running in background.** The programs in these windows continue to run until they need input from the keyboard. Then they stop running until you switch to that window and enter further commands.

To prevent a program from running in background, use the Freeze command (on the Rearrange Menu) or press Ctrl+NumLock just before you switch away from it.

---

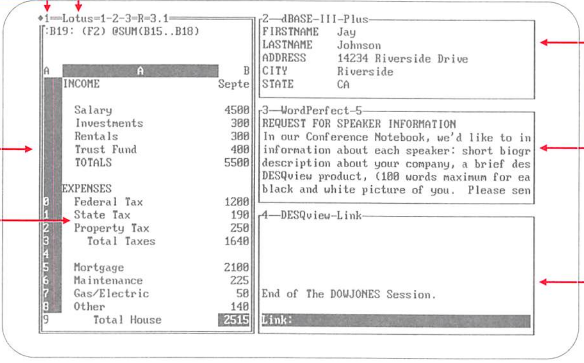
† Or, with certain display adapter boards, 30x80, 43x80, 50x80, or 60x80.

The **window name** is the name that appears on the Open Window menu.

The **window number** identifies the window for the purpose of switching windows. It is assigned when the window is opened.

The **window frame** defines the window's boundaries.

The **current window** is the window you are working on. It is distinguished from the other windows by having a frame that consists of a double line.



```
1=Lotus=1-2-3=R=3.1
:B19: (F2) @SUM(B15..B18)

A              A              B
  INCOME                  Septe

    Salary                 4500
    Investments             300
    Rentals                 300
    Trust Fund              400
    TOTALS                 5500

  EXPENSES
0   Federal Tax            1200
1   State Tax               190
2   Property Tax            250
3     Total Taxes          1640
4
5   Mortgage               2100
6   Maintenance             225
7   Gas/Electric             50
8   Other                   140
9      Total House         2515
```

```
2—dBASE-III-Plus
FIRSTNAME   Jay
LASTNAME    Johnson
ADDRESS     14234 Riverside Drive
CITY        Riverside
STATE       CA
```

```
3—WordPerfect-5
REQUEST FOR SPEAKER INFORMATION
In our Conference Notebook, we'd like to in
information about each speaker: short biogr
description about your company, a brief des
DESQview product, (100 words maximum for ea
black and white picture of you.  Please sen
```

```
4—DESQview-Link




End of The DOWJONES Session.

Link:
```

The **background windows** are all other windows on the screen (or hidden). Their frames consist of a single line.

Programs That Run Only in Full-Screen Windows

Some programs write directly to the display screen. On 8086 or 80286 PCs, such programs cannot run in small windows or in background.

You can put such **full-screen only** programs in small windows but, when you do, they are suspended. You can perform DESQview operations (move, resize, scroll, mark, and so forth) on these windows, but you must zoom them back to full screen when you want the programs to resume running.

DESQview provides special loaders for many popular full-screen-only programs. A loader allows them to run in small windows anyway. See ***page 170***.

With DESQview 386 , **any** programs which run in a standard video mode can run in background provided Virtualization is ON. See ***page 176.***

It should be noted that DESQview 386 cannot virtualize protected mode graphics programs, like Lotus 1-2-3 v. 3.1. Such programs can only run full-screen and in foreground.

Keyboard Usage

DESQview commands are performed by displaying the appropriate DESQview menu and either pressing the key (or keys) listed to the right of the command† or clicking on the menu line containing the command.

In DESQview you can use the keyboard and the mouse interchangeably. Except for starting a Learn operation, which can only be done from the keyboard, all DESQview operations can be performed with the keyboard or with the mouse—or a combination of both—whichever you find easiest.

Moving, resizing, scrolling, marking, and switching windows are simpler with the mouse since you can bypass menus when you use the mouse for these operations.

For switching between the first nine windows, there is a keyboard shortcut as well. Display the DESQview menu and type the number of the window you want. It is not necessary in this case to display the Switch Windows menu first.

This section summarizes the keys that DESQview uses. The description of the key identifies when and how the key is used by DESQview.

Some keys only work as described when a DESQview menu is displayed and some only work on menus with fill-in fields—this is noted for each key. There are two types of fill-in fields:

- **Text fields** are the most common type. When you tab to a text field, the cursor moves to the left-most character of the field and what you type is entered from left to right, in the usual manner. The first time you type in the field, it is automatically cleared for you—unless you are in **insert mode** or the cursor is not in the home position when you start to type.
- Numeric fields are used for numbers. You enter text from the right when you tab to a numeric field, the cursor moves to the right-most character of the field. Then, each time you enter a digit, the other digits are shifted to the left and the digit you typed becomes the new right-most digit. The first time you type in the field, it is automatically cleared for you.

---

† Alternately, you can move the menu cursor to the command line you want using the arrow keys and select the command by pressing the spacebar.

Alt

DESQ

Because programs run in DESQview unmodified, DESQview must make all keys available to programs at all times. However, DESQview requires a special key for its own use—to get DESQview's attention.

DESQview uses the Alt key as its special key, and calls it the **DESQ key.**

Tapping the DESQ key gets DESQview's attention and displays the DESQview menu. The program in the current window continues running in background—if it is permitted to do so.

Most programs use the Alt key like the Shift key: you hold it down while you press another key. To use Alt as the DESQ key, do not hold it down. Press and release it quickly like any other key.

To remind you of this usage, we ask you to **tap** the DESQ key, rather than to press or type it.

You may reassign the DESQ key, if you need to, by running DESQview's Setup program (see **Appendix A: *The DESQview Setup Program***).

The Alt key is sometimes used by application programs to display the main menu bar. If you find this to be a conflict with the default DESQ key, you might want to change the DESQ key to the left or right Ctrl key (or both Ctrl keys—Setup gives you the choice).

Alt + Alt

Switch

You may have need to switch quickly from one window to the next. For the first nine windows, you can do this by tapping the DESQ key twice in quick succession. This action cycles (quickly switches) between open windows in numerical order excluding windows that are hidden or put aside.

NOTE: You can also tap the Alt key and type a window number to display a particular window quickly.

⇧Shift + Alt

Learn

In order to start and finish DESQview scripts (keystroke macros), DESQview requires a second special key for its own use.

DESQview uses **Shift+Alt** as this special key—that is, the keystroke formed by holding down the Shift key and then tapping the DESQ (Alt) key.

Pressing the Learn key (Shift+Alt) displays the Learn menu, from which you select the Learn action you want. The program in the current window continues running in background—if it is permitted to do so.

For more information about using Learn, see **Chapter 5**, *Learn: DESQview's Keystroke Macro Feature*.

> This key combination is generally available at all times, whether a program is running or a DESQview menu is displayed.

F1

Help

F1 is the help key. To request DESQview context-sensitive help, press F1 when a menu or Change a Program is displayed. (See ***page 96***.)

Spacebar

The spacebar "selects" the entry pointed to (highlighted) by the menu cursor.

Pressing the spacebar has the same effect as clicking on a menu entry. The command or option pointed to by the menu cursor is selected.

The easiest way to select a command or menu option is to press the key (or keys) listed to the right of the entry.

An alternate method is to move the cursor to the entry you want (using the arrow keys) and then select the entry by pressing the spacebar.

This key will only function as described when a DESQview menu is displayed.

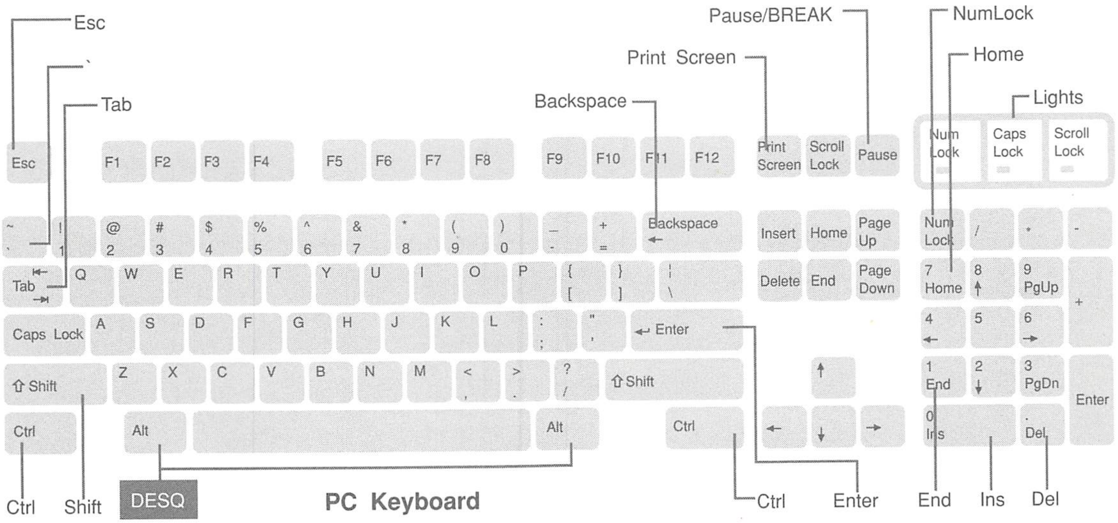
Enter

The action performed by ↵ (Enter key) depends on whether the ↵ key appears on the menu:

- ☐ If ↵ **does not** appear on the menu, pressing ↵ has the same effect as pressing the spacebar—namely, it selects the entry pointed to by the menu cursor.
- ☐ If ↵ **does** appear on the menu, pressing ↵ completes the action associated with the menu.

When ↵ appears on a menu, it appears first. Most often it selects **DONE** and **START.**

This key will only function as described when a DESQview menu is displayed.



PC Keyboard

Home

The action of the Home key depends on whether the menu has fill-in fields:

- If the menu **does not** have fill-in fields, pressing Home has the same effect as clicking on a menu entry or pressing the space bar. The command or option pointed to by the menu cursor is selected.
- If the menu **does** have fill-in fields, pressing Home moves the typing cursor to the first field.

Also see *page 61* for information on how Home is used in conjunction with the **keyboard mouse**.

> This key will only function as described when a DESQview menu is displayed.

End

The End key is only available when the menu has fill-in fields and the typing cursor is in one of these fields.

In this case, pressing End moves the cursor after the right-most character in that field.

If the cursor is in a numeric field, End is ignored.

> This key will only function as described when a DESQview menu is displayed.

Arrow Keys

The actions of the arrow keys depend on whether the menu has fill-in fields.

If the menu **does not** have fill-in fields:

- **Up/Down Arrow** move the menu cursor to the next available (selectable) entry above or below the cursor's current position.
- **Left/Right Arrow** move the menu cursor to the next available (selectable) entry to the left or right of the cursor's current position.

The menu cursor moves in a circular manner. For example, pressing down arrow when the menu cursor is on the last available entry moves it around to the first available entry.

If the menu **does** have fill-in fields:

- The **arrow keys** move the typing cursor up, down, left, or right one position within the menu area.

If you move the typing cursor into a numeric field, it jumps to the right-most character of the field.

Also see ***page 61*** for information on how the arrow keys are used in conjunction with the **keyboard mouse**.

These keys will only function as described when a DESQview menu is displayed.

Tab

The Tab key is only available when the menu has fill-in fields.

In this case, pressing Tab moves the cursor to the next menu entry that can be selected. This may be a command, an option, or a fill-in field.

Pressing Tab on the last entry moves the cursor to the first entry.

If the cursor is not positioned on a selectable command or option or within a fill-in field when you press Tab, the cursor moves to the field it was last in.

This key will only function as described when a DESQview menu is displayed.

↑Shift + Tab

Backtab

When the Tab key is pressed while holding down the Shift key, it is called the **Backtab key.**

The Backtab key is only available when the menu has fill-in fields.

In this case, the action of Backtab depends on where the cursor is positioned:

- If the cursor is positioned on the first character of a command, an option, or a fill-in field, pressing Backtab moves the cursor to the previous menu entry that can be selected.
- If the cursor is positioned in a command, an option, or a fill-in field, but not on the first character of the entry, pressing Backtab moves the cursor to the first character.

Pressing Backtab on the first entry moves the cursor to the last entry.

If the cursor is not positioned on a selectable command or option or within a fill-in field when you press Backtab, the cursor moves to the field it was last in.

This key combination will only function as described when a DESQview menu is displayed.

Esc

Esc

The action of the Esc key depends on what is displayed on the screen.

If the DESQview menu is displayed, pressing Esc causes:

- The DESQview menu to be removed.
- The typing cursor to reappear in the current window.
- The **keyboard mouse** (see **Appendix A**) to reappear on the current window—if it was ON in that window.

If the program in the current window was suspended (by the Freeze command or Ctrl-NumLock), it remains suspended until you press any key—see **Ctrl+NumLock** on ***page 53.***

If the program in the current window was scrolled (by the Scroll command), it remains scrolled until you type to the program or press the Esc key again—see **Scroll** on *page 79*.

If a menu other than the DESQview menu is displayed, pressing Esc cancels that menu.

If a DESQview error message (with no options) is displayed, it is removed.

NOTE: On menus without fill-in fields, a mouse shortcut for Esc is to click the cancel button (or to press the PgUp key-see ***page*** *62).*

This key will only function as described when a DESQview menu is displayed.

Backspace

The Backspace (←) key is only available when the menu has fill-in fields and the typing cursor is in one of these fields.

In this case, pressing Backspace moves the cursor left one position (if possible) and then erases the character at that position.

If the cursor is in a numeric field, Backspace has the same effect as Del—it erases the character at the cursor.

> This key will only function as described when a DESQview menu is displayed.

Delete

The Del key is only available when the menu has fill-in fields and the typing cursor is in one of these fields.

In this case, pressing Del erases the character at the cursor.

> This key will only function as described when a DESQview menu is displayed.

Ctrl + End

Ctrl+End

The Ctrl+End key is only available when the menu has fill-in fields and the typing cursor is in one of these fields.

In this case, pressing Ctrl+End erases the field from the current cursor position through the end of the field.

If the cursor is in a numeric field, Ctrl+End erases the entire contents of the field.

> This key combination will only function as described when a DESQview menu is displayed.

0
Ins

Insert

The Ins key is only available when the menu has fill-in fields. In this case, the Ins key controls **insert mode**.

Initially, when a menu is first displayed, **insert mode** is OFF. Characters you type overstrike any existing text in the field.

When you press the Ins key, **insert mode** is turned ON. Characters you type are inserted at the cursor position, moving characters to the right.

Each time you press Ins, **insert mode** is reversed—from OFF to ON, or from ON to OFF.

You can determine the current **insert mode** setting from the cursor shape. When **insert mode** is ON, the cursor is square.

> This key will only function as described when a DESQview menu is displayed.

~ ‘

Quoting Character

The ‘ key has a special meaning in DESQview. It tells DESQview that the next key you press should not play back the DESQview script (keystroke macro) that is assigned to it.

In DESQview, when you use the Learn feature to create scripts, you assign each script you create to a key on the keyboard.

The key you reassign (called the **mapped key**) no longer performs its original function. When you press it, the script you defined for it is played back.

Pressing ‘ immediately followed by a mapped key overrides the key's mapped meaning. The key's original action is performed instead.

The ‘ character is called the quoting character. To enter the character itself, type it twice “.

For more information about using Learn, see **Chapter 5, *Learn: DESQview's Keystroke Macro Feature.***

> This key is generally available at all times, whether a program is running or a DESQview menu is displayed.

Ctrl + Num Lock

Ctrl+NumLock

Pressing the Ctrl+NumLock key suspends or **freezes** the program running in the current window.

The program resumes running the next time you press any key (except DESQ, Learn, or Ctrl) and the key you pressed is discarded— which is to say it is not acted on by the program.

One of the most important uses of Ctrl+NumLock is to temporarily stop a program from running in background.

Normally, when you switch from one program to another, the program you switched away from continues to run in background—if it is permitted to do so.

Sometimes, however, you want to stop a program from continuing to run while you work in another program. To do this, press Ctrl+ NumLock immediately followed by the DESQ key. The program is suspended until you switch back to it and press Esc (or any other key).

Some programs written expressly for DESQview cannot be suspended, or may resume automatically.

NOTE: Pressing Ctrl+NumLock is a shortcut for the Freeze command.

> This key combination is generally available at all times, whether a program is running or a DESQview menu is displayed.

Pause

Pause

Pressing the Pause[†] key locks or **freezes** your entire system— in other words, it suspends the program running in the current window, all background programs, and all DOS operations in progress.

Your system remains locked until you press a key. Then, the key you pressed is discarded and your system resumes running where it left off.

You can not use any of DESQview's special keys (DESQ, Learn, or Ctrl) to unlock your system. Pressing these keys has no effect.

Pause should not be confused with Ctrl-NumLock or with the Freeze command. These actions only freeze the program running in the current window.

REMEMBER: Although it is easier to hit Pause than it is to hit Ctrl+NumLock, Pause stops everything.

You cannot learn a script on the Pause key and therefore cannot remap it to be the same as the Ctrl+NumLock key.

This key is generally available at all times, whether a program is running or a DESQview menu is displayed.

Ctrl + Pause

Ctrl+Break

Most programs, if they recognize the Ctrl+Break key at all, recognize it as meaning to "abort the command that is currently in progress."

When you press Ctrl+Break in DESQview, DESQview first checks if you are playing back a script (keystroke macro) or performing a DESQview transfer operation. If you are, DESQview acts upon the Ctrl+Break—aborting the script or the transfer.

If neither of these DESQview operations is in progress, the Ctrl+Break key is given to the program running in the current window to act upon.

"Break" is located on the front edge of the Pause key or the Scroll Lock key.

This key combination is generally available at all times, whether a program is running or a DESQview menu is displayed.

[†] The Pause key is only available on enhanced PC keyboards, not on the older PC-XT or PC-AT keyboards.

Print Scrn

Print Scrn

Pressing the Print Scrn key causes the image currently displayed on your screen to be printed exactly as it appears— including window frames (if any) and any DESQview menu that's displayed.

To print the contents of the current window, zoom it to full-screen before pressing Print Scrn.

You cannot learn a script on the Print Scrn key.

On PC-XT and PC-AT keyboards, Print Scrn is known as PrtSc.

> This key is generally available at all times, whether a program is running or a DESQview menu is displayed.

Ctrl + Alt + Del

Ctrl+Alt+Del

In DOS, when you press Ctrl+Alt+Del, DOS aborts whatever you are doing and reboots your system. This is commonly known as the **three-finger crash.**

When you press Ctrl+Alt+Del in DESQview, however, only the program running in the current window is aborted. DESQview is not aborted and your system is not rebooted.

To reboot DOS, you must use the key combination Ctrl+**Shift**+Del—see the next column.

> This key combination is generally available at all times, whether a program is running or a DESQview menu is displayed.

Ctrl + ⇧Shift + Del

Ctrl+Shift+Del

Pressing Ctrl+**Shift**+Del aborts whatever you are doing and reboots your system. (This is the DESQview equivalent of DOS's three-finger crash.)

In DESQview, the normal three-finger crash combination, Ctrl+Alt+ Del, only aborts the program running in the current window. To abort DESQview, you must use Ctrl+**Shift**+Del.

If pressing Ctrl+Shift+Del has no effect, you must turn you system's power off and then back on.

On the enhanced PC keyboard, you must perform Ctrl+Shift+Del using the **Del** key on the numeric keypad—not the **Delete** key on the cursor keypad.

> This key combination is generally available at all times, whether a program is running or a DESQview menu is displayed.

Mouse Usage

You can use the mouse and keyboard interchangeably. You can perform part of a command using the mouse and part using the keyboard— whichever you find easiest.

If you do not have a real mouse, a mouse can be emulated using the keyboard (see *page 61*).

The position of the mouse on the screen is indicated by a white diamond—the **mouse cursor.** As you move the mouse, this diamond moves.

When the mouse cursor is on a DESQview menu, it moves the menu cursor.

DESQview uses three buttons:

- **Select button** (**BUTTON 1**) selects the item pointed to by the mouse cursor.
- **Cancel button** (**BUTTON 2**) cancels the last operation.
- **DESQ button** (**BUTTON 3**) displays the DESQview menu.

Displaying the DESQview Menu

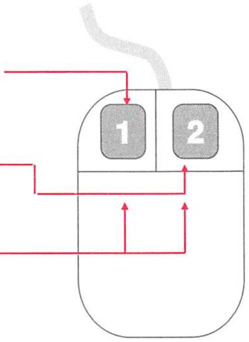
When you want to perform a DESQview operation, you start by displaying the DESQview menu.

How you do this depends on whether you have a two- or three- button mouse:

- On a **two-button mouse,** click both of the buttons simultaneously.
- On a **three-button mouse,** click the middle button **(BUTTON 3).**

Both of these methods are referred to as "clicking the DESQ button."

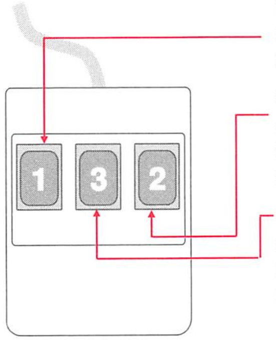
The mouse cursor position is remembered independently for each program and for each DESQview menu. When you switch to a window, the mouse moves back to where it was when you last switched away from that window. When you display a DESQview menu, the mouse moves to its last position on that menu.



Click the **select button** to select the item pointed to by the mouse cursor.

Click the **cancel button** to cancel the last operation in the window that contains the mouse cursor.

Click on **both buttons** simultaneously to get DESQview's attention and display the DESQview menu.



Click the **select button** to select the item pointed to by the mouse cursor.

Click the **cancel button** to cancel the last operation in the window that contains the mouse cursor.

Click on the **DESQ button** to get DESQview's attention and display the DESQview menu.

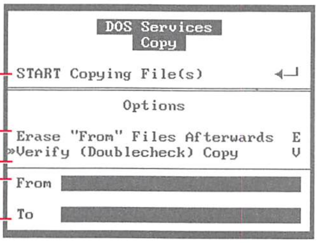
Selecting an Entry on a Menu

To select an entry on a DESQview menu:

- **Position the mouse on the entry you want to select.**
- **Click the select button.**

There are three types of entries you can select:

- ❑ Selecting a command causes that command to be performed.
- ❑ Selecting an option causes that option to be turned ON (be preceded by » and be highlighted) or be turned OFF (have » and the highlighting removed).
- ❑ Selecting a fill-in field causes the typing cursor to appear in that field at the mouse cursor position.



Switching Windows

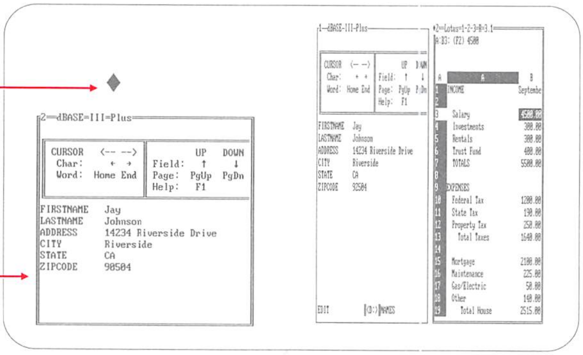
To switch windows:

- **Position the mouse on any visible part of the window you want to switch to.**
- **Click the select button.**

If no part of the window is visible:

- **Click the DESQ button to display the DESQview menu.**
- **Click on Switch Windows to display the Switch Windows menu.**
- **Click on the name of the window you want to switch to.**

You can also cycle through the set of open windows by clicking the DESQ button twice in a row. Each double click switches to the next window in turn, excluding windows that have been hidden or put aside.



FIRSTNAME Jay
LASTNAME Johnson
ADDRESS 14234 Riverside Drive
CITY Riverside
STATE CA
ZIPCODE 92504

```
A:B3: (F2) 4500

A  A                B
1  INCOME           Septembe
2
3    Salary         4500.00
4    Investments     300.00
5    Rentals         300.00
6    Trust Fund      400.00
7    TOTALS         5500.00
8
9  EXPENSES
10   Federal Tax    1200.00
11   State Tax       190.00
12   Property Tax    250.00
13     Total Taxes  1640.00
14
15   Mortgage       2100.00
16   Maintenance     225.00
17   Gas/Electric     50.00
18   Other           140.00
19     Total House  2515.00
```

FIRSTNAME Jay
LASTNAME Johnson
ADDRESS 14234 Riverside Drive
CITY Riverside
STATE CA
ZIPCODE 98504

The **mouse cursor**—a diamond—appears if you have installed a mouse or turned on the **keyboard mouse**.

To **switch windows**, click on any visible part of the window that you want to switch to.

Marking Information

To mark information in the current window:

- **Click on the left frame bar of the window to display the Mark menu.**
- **Move the cursor to the beginning character and click twice.**
- **Move the cursor to the ending character and click twice.**

To transfer the marked information to another program, use the Transfer command (see *pages 89-92*).

Moving and Resizing a Window

To move the current window:

- **Click on the top frame bar of the window to display the Move menu.**

Or, to resize it:

- **Click on the bottom frame bar to display the Resize menu.**

Then:

- **Move the mouse until the window is positioned and sized the way you want.**

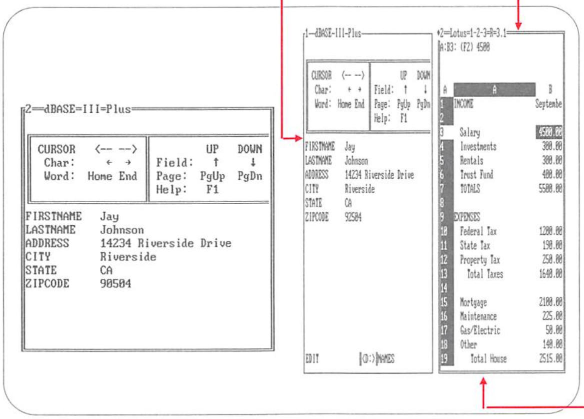
To alternate between moving and resizing:

- **Click twice.**

To finish:

- **Click once to make the mouse cursor reappear on the Move or Resize menu.**
- **Click anywhere in the current window—or on DONE, if you prefer.**

To **mark text for transfer,** click on the left frame bar. Then click twice at the beginning and ending points.



```
2=dBASE=III=Plus
CURSOR  <-- -->          UP   DOWN
 Char:    ←  →   Field:  ↑     ↓
 Word:  Home End  Page: PgUp  PgDn
                  Help:  F1

FIRSTNAME   Jay
LASTNAME    Johnson
ADDRESS     14234 Riverside Drive
CITY        Riverside
STATE       CA
ZIPCODE     92504
```

```
1—dBASE-III-Plus
CURSOR  <-- -->          UP   DOWN
 Char:    ←  →   Field:  ↑     ↓
 Word:  Home End  Page: PgUp  PgDn
                  Help:  F1

FIRSTNAME   Jay
LASTNAME    Johnson
ADDRESS     14234 Riverside Drive
CITY        Riverside
STATE       CA
ZIPCODE     92504

EDIT         |<D:>|NAMES
```

```
2=Lotus=1-2-3=R=3.1
A:B3: (F2) 4500

A        A              B
1  INCOME          Septembe
2
3    Salary          4500.00
4    Investments      300.00
5    Rentals          300.00
6    Trust Fund       400.00
7    TOTALS          5500.00
8
9  EXPENSES
10   Federal Tax     1200.00
11   State Tax        190.00
12   Property Tax     250.00
13     Total Taxes   1640.00
14
15   Mortgage        2100.00
16   Maintenance      225.00
17   Gas/Electric      50.00
18   Other            140.00
19     Total House   2515.00
```

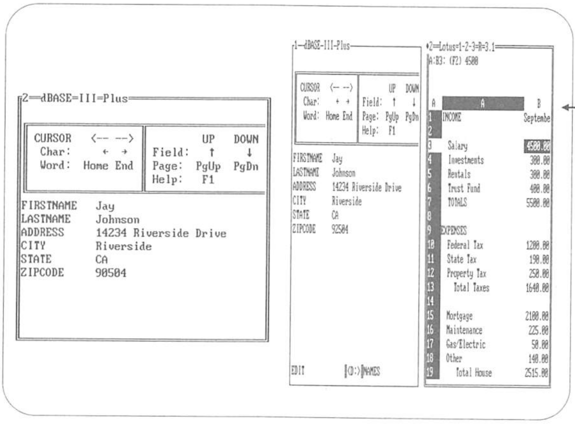
To **move** the window, click on the top frame bar. Then move the mouse until the window is where you want it, click once, then click on any visible part of the window (or on DONE).

To **resize** the window, click on the bottom frame bar. When the window is sized the way you want, click once, then click on any visible part of the window (or on DONE).

Scrolling Information

To scroll the contents of the current window:

- **Click on the right frame bar of the window to display the Scroll menu.**
- **Move the mouse until the contents of the window are positioned the way you want them.**
- **Click once to make the mouse cursor reappear on the Scroll menu.**
- **Click anywhere in the current window—or on DONE, if you prefer.**



```
2=dBASE=III=Plus

 CURSOR    <-- -->              UP    DOWN
  Char:       ←  →      Field:  ↑      ↓
  Word:    Home End     Page:  PgUp   PgDn
                        Help:   F1
FIRSTNAME    Jay
LASTNAME     Johnson
ADDRESS      14234 Riverside Drive
CITY         Riverside
STATE        CA
ZIPCODE      90504
```

```
1—dBASE-III-Plus

 CURSOR  <-- -->              UP  DOWN
  Char:     ← →     Field:   ↑    ↓
  Word:  Home End   Page:  PgUp  PgDn
                    Help:   F1
FIRSTNAME   Jay
LASTNAME    Johnson
ADDRESS     14234 Riverside Drive
CITY        Riverside
STATE       CA
ZIPCODE     92504

EDIT          |<D:>|NAMES
```

```
♦2=Lotus=1-2-3=R=3.1
A:B3: (F2) 4500

A          A               B
1  INCOME              Septembe
2
3    Salary             4500.00
4    Investments         300.00
5    Rentals             300.00
6    Trust Fund          400.00
7    TOTALS             5500.00
8
9  EXPENSES
10   Federal Tax        1200.00
11   State Tax           190.00
12   Property Tax        250.00
13     Total Taxes      1640.00
14
15   Mortgage           2100.00
16   Maintenance         225.00
17   Gas/Electric         50.00
18   Other               140.00
19     Total House      2515.00
```

To **scroll** the window, click on the right frame bar. Then move the mouse until the contents of the window are positioned the way you want them, click once, then click on any visible part of the window (or on DONE).

When you do not have a real (hardware) mouse installed on your system, DESQview lets you emulate a mouse using the keyboard.To do this, you need to enable the keyboard mouse using DESQview Setup (see **Appendix A**).

When enabled in Setup, the **keyboard mouse** is normally OFF. It is turned ON only when you **explicitly** tell DESQview that you want it turned ON.

However, DESQview maintains the current mouse cursor position even when the **keyboard mouse** is OFF.

The **keyboard mouse** is not available when you have a hardware mouse installed. You tell DESQview whether you have a hardware mouse when you install DESQview—or by running the Setup program (see **Appendix A**).

Although you are allowed to turn the **keyboard mouse** ON on DESQview menus, there is no reason to do so since the keys available on DESQview menus are exactly the same whether the **keyboard mouse** is ON or OFF.

Turning the "Keyboard Mouse" ON and OFF

The **Keyboard mouse** mode is controlled by the key that you select as the **keyboard mouse key** in DESQview Setup. Each time you tap this key, the mode is reversed and a unique "short beep" sounds:

- **ON: A single beep** sounds. Then, the mouse cursor appears inside the current window, or on the currently displayed DESQview menu.
- **OFF: A double beep** sounds, and the mouse cursor is removed from the screen.

The **keyboard mouse** mode and the mouse cursor position are remembered independently for each program and for each DESQview menu.

When you switch to a window, the **keyboard mouse** mode and the mouse cursor position are restored to what they were when you last switched away from that window.

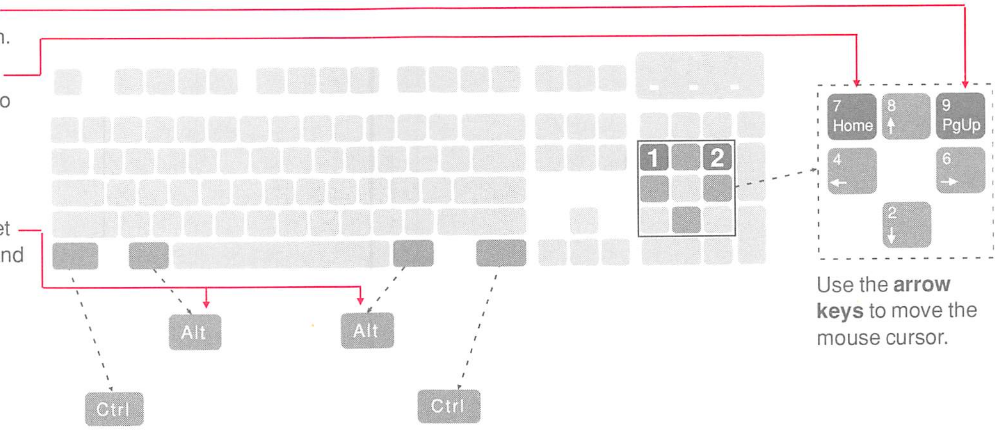
When you display a DESQview menu, the mouse cursor position is restored to its last position on that menu. However, **keyboard mouse** mode is always turned OFF.

Note that **keyboard mouse** must first be enabled in DESQview Setup.

Press the **PgUP key** to cancel the last operation.

Press the **Home key** to select the item pointed to by the mouse cursor.

Tap the **DESQ key** to get DESQview's attention and display the DESQview menu.



Use the **arrow keys** to move the mouse cursor.

Positioning and Selecting with the "Keyboard Mouse"

When the **keyboard mouse** is ON in a window, it **usurps use of the major cursor keys**, which are no longer available to the program running in the window:

- The **arrow keys** move the mouse cursor.
- **Home** acts as **BUTTON 1**— namely, it selects what is pointed to by the mouse cursor.
- **PgUp** acts as **BUTTON 2**— namely, it cancels the last operation in the window that contains the mouse cursor.

Also see the discussion of the Esc key on *page 50* .

You explicitly enable the **keyboard mouse** capability by running the setup program (See **Appendix A**).

Setting the "Keyboard Mouse" increment

When the **keyboard mouse** is ON, pressing an arrow key moves the mouse cursor up or down one line, or left or right one character.

You can also move the mouse cursor in larger increments:

- **keyboard mouse Ctrl+Up/Ctrl+Down** moves the mouse cursor four (4) lines at a time.
- **Ctrl+Left/Ctrl+Right** moves the mouse cursor eight (8) characters at a time.

If these increments are not what you need, you can change them:

- **Ctrl+Gray +** increases the increment by one.
- **Ctrl+Gray -** decreases the increment by one.

Note that the keyboard mouse is disabled by default and must be enabled in DESQview Setup if you want to use it.

Running Programs with Multiple Windows

Most programs you run in DESQview display only a single window on the screen. However, programs written expressly for DESQview[†] may display multiple windows.

When a program displays more than one window on the screen, you may need to explicitly tell DESQview which window you want the following commands to apply to:

- The Zoom command and the Move, Resize, Position, and Scroll commands on the Rearrange menu.
- The Mark and Scissors commands.
- The Help for Program and Close Window commands.[††]

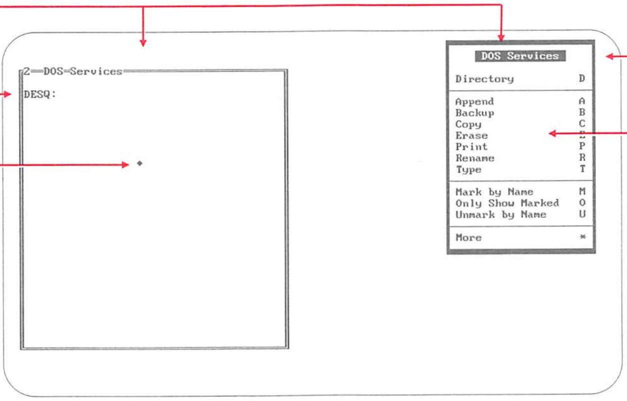
You do this by positioning the mouse cursor anywhere within (or on the frame of) the window you want the command to apply to **before** you display the DESQview menu.

If you do not have a mouse, you can use the **keyboard mouse** (if enabled—see **Appendix A**) to position the mouse cursor. However, this is usually not necessary because the mouse cursor (even if it is invisible) is normally in the program's main (task) window.

If a program has multiple windows, you can also use the mouse shortcuts for Move, Resize, Mark, and Scroll by clicking on the appropriate frame of any of the multiple windows.

[†] Such as Add a Program, Change A Program, and DESQview Companions.

[††] It is up to the program whether help is window-specific or is just generic help for the program. A program may interpret Close Window to mean close only the window pointed to by the mouse cursor, although this would be unusual.



DOS Services was written expressly for DESQview. It has two windows.

The main window (also called the **task window**) is the "DOS Services" window. The presence of a window number identifies it as the task window.

Selecting Zoom, Move, Resize, Position, and so forth when the mouse cursor is in the DOS Services task window, causes the command action to be performed on this window.

The second window is the "DOS Services menu" window. It has no frame and thus no identifying window name.

Selecting Resize when the mouse cursor is in the DOS Services menu window, causes the command action to be performed on this window.

1. Position the mouse cursor on the program window you want to manipulate.

When you run a program that has multiple windows, you will find that the mouse cursor is usually kept in the program's main (task) window.

So, when you perform any of the commands listed to the left, the task window will be zoomed, moved, resized, and so forth—which is normally what you want.

However, if you find that these commands manipulate the wrong window, or if you explicitly want to manipulate a non-task window, just position the mouse cursor in that window first.

If you do not have a real (hardware) mouse, you must use the **keyboard mouse**. To make the mouse cursor appear:

- **Tap the key you assigned in DESQview Setup to activate the keyboard mouse.**

Then, move the mouse cursor with the arrow keys. When you are done, tap the Ctrl key again to turn the **keyboard mouse** OFF.

2. Display the DESQview menu and select the command you want to perform.

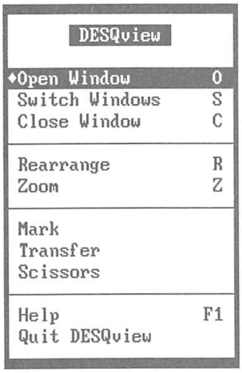
A program has control over whether the Zoom, Move, Resize, Position, Scroll, Mark, and Scissors commands are permitted on its windows. Some programs do not allow these commands on some or all of their windows.

The Help for Program command generally gives help that is specific to the window being pointed to—but that is up to the program (see *pages 96-99*).

The Close Window command generally closes down the entire program—but that is also up to the program.

You can determine which window is the main (task) window by examining the window's frame—if it has one. All windows have the program name. But, only the task window has a window number.

The DESQview Menu



The DESQview menu is the master list of DESQview commands available to you:

- Open Window, Switch Windows, and Close Window starts programs running in DESQview, switches between programs, and closes down programs,respectively.
- Rearrange and Zoom control the size, position, and color of windows. Rearrange also lets you freeze, hide, and put aside windows, and tune performance.
- Mark, Transfer, and Scissors let you move information from one program to another.
- Help gives you online help for DESQview and for programs.
- Quit DESQview exits DESQview and returns control to DOS.

Open Window

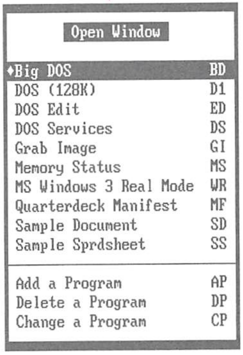
You use the Open Window command to display the master list of programs installed in DESQview.

To start up a program, you first select this command. Then you select the program you want to start up from the Open Window menu that appears.

When you start up a program, a window frame appears (or the screen clears if the program is full-screen-only) and then the program is started up in the window.

If you have created scripts for the program you are loading, they are also loaded.

Also see ***pages 69-72***.



Switch Windows

You use the Switch Windows command to display a list of all the programs currently running in DESQview.

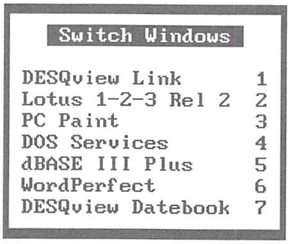
This menu lists all programs, including those that are hidden or put aside to disk, RAM disk, or expanded memory.

To switch to a different window, you first select this command. Then you select the window you want from the Switch Windows menu that appears.

These are three shortcuts:

- **Tap the DESQ key and then type the number of the window you want.**
- **Click on any visible part of the window.**
- **Tap the DESQ key twice, or click the DESQ button twice to cycle through all the windows in turn.**

Also see *page 73*.



Close Window

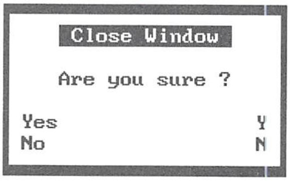
You use the Close Window command to close down the program running in the current window and then discard the window.

You should finish whatever you are doing in the program—and save any files that you want to keep—before selecting **Close Window.**

To prevent you from accidentally closing a window, the Close Window menu appears, asking you to confirm that you really want to close the window.

It is possible to configure a program so that it cannot be closed down with the Close Window command. See *page 187*.

Also see *page 75*.



Rearrange

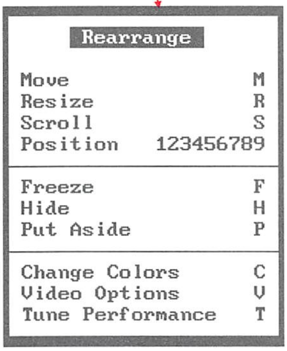
Zoom

You use the Rearrange command to:

- Move, position or resize the current window or scroll its contents.
- Freeze (suspend) the program running in it.
- Hide it by removing it from the screen.
- Remove it from the screen and, additionally, put it aside to disk, RAM disk, or expanded memory and free up the memory that the program running in the window is using.
- Change its colors or the number of lines displayed.
- Dynamically tune the window's performance.

Also see *pages 77-84*.

You use the Zoom command to zoom (enlarge) a small window to a full-screen window or, if the window is already full-screen, to shrink it back to its original size and position.



Mark

Transfer

Scissors

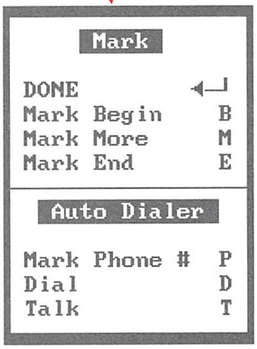
You use the Mark and Transfer commands to move information from one program to another.

When you select **Mark**, the cursor is locked into the current window and the Mark menu appears. You then mark the block (or blocks) of information you want to transfer.

After you are finished marking, you switch to the window to which you want to transfer the information, move the cursor to the transfer point, and select **Transfer** to display the Transfer menu. Then you complete the transfer.

DESQview types what you marked into the running program, just as if you had typed it from the keyboard yourself.

Also see *pages 89-92*. See **Chapter 6** for information on Scissors.



Help for DESQview

Help for Program

You use Help to get immediate, online information about a DESQview command or about a program. What you get help for depends on the wording of the Help line:

- **Help** means that pressing **F1** will give help for the DESQview menu.
- **Help for Program**[†] means that pressing **F1** will give help for the program running in the current window.

Regardless of what appears on the Help line, you can always get help for any DESQview menu:

- **Display the menu you want help for and press F1.**

If you want help for the DESQview menu when **Help for Program** appears on the Help line of the DESQview menu:

- **Display some other menu, press F1, then type /.**

Also see *pages 96-99*.

[†] This option is only available for programs written expressly for DESQview. If the program was not written by Quarterdeck, Help may not follow the format or rules for DESQview Help. The design of Help is up to the developer of the program.

Quit DESQview

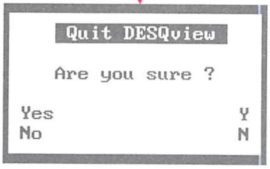
You use the Quit DESQview command to end your DESQview session and return control to DOS.

So you do not accidentally quit DESQview, the Quit DESQview menu appears, asking you to confirm that you really want to exit DESQview:

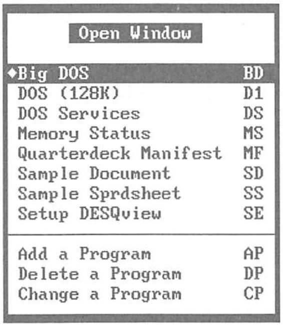
- **Select Yes or No.**

If any of the programs still running are configured so they cannot be closed down with the Close Window command (see *page 75*), you will not be able to select Quit DESQview until you close down each such program by performing its **quit** command.

If you created any DESQview scripts during your DESQview session that you have not saved, DESQview reminds you to save them before you quit.



The Open Window Menu



The **Open Window** menu is the master list of programs set up in DESQview—and your starting point for running a program in DESQview.

When you install DESQview, the Open Window menu is automatically customized to your system by the DESQview installation program.

DESQview's installation program searches the hard disk on which DESQview was installed for the programs it knows about—namely, the programs listed on the Add a Program menu—and automatically sets them up in DESQview. (See *Note 4, page 21* for how to have DESQview automatically set up programs from other hard disks.) Then, it adds five standard programs:

- **Big DOS.** A DOS window that uses the maximum amount of conventional memory your system can provide, plus 256K EMS/XMS/VCPI/DPMI memory, if it is available.
- **DOS (128K).** A DOS window with memory to run a program up to about 128K, less the size of **COMMAND.COM.**
- **DOS Services.** A built-in DESQview Companion that gives you sorted directories and menu-driven access to DOS commands.
- **Sample Document** and **Sample Spreadsheet.** Sample programs used in **Chapter 2**, ***Getting Started: A Tutorial.***

Programs are listed in alphabetical order. If all your programs will not fit on the Open Window menu, the entry **More** appears at the bottom (above **Add a Program**) to indicate that more programs are listed on additional menu pages.

If you do not have a hard disk, only the four standard programs are installed.

Starting Up a Program

To start up a program, using the keyboard:

- **Tap the DESQ key and type O to display the Open Window menu.**
- **Type the one or two characters that correspond to the program you want to start up.**

Or, using the mouse:

- **Click the DESQ button to display the DESQview menu.**
- **Click on Open Window.**
- **Click on the name of the program you want to start up.**

REMEMBER: Before you can start up a program it must be set up in DESQview. A program is set up only if its name appears on the Open Window menu.

If you have created scripts for the program you are loading, they are also loaded.

Using the "More" Option

The Open Window menu has room for 17 program names. If you install more than 17 programs, the entry **More** appears at the bottom (above **Add a Program**) to indicate that additional programs are available.

To see more of the list of installed programs when **More** appears, using the keyboard:

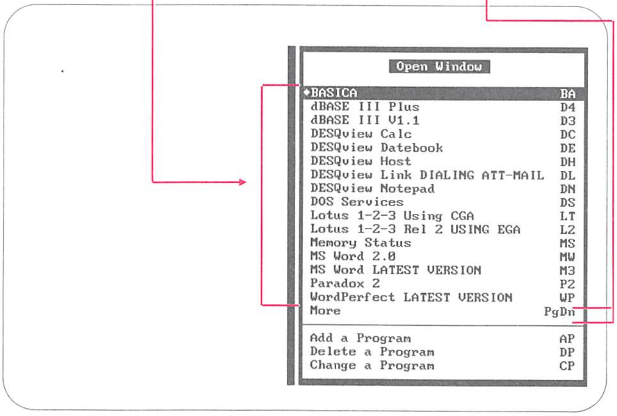
- **Press the PgDn key.**

Or, using the mouse:

- **Click on More.**

When you have displayed a second (or subsequent) menu page, press the PgUp or Esc key, or click the cancel button, to back up.

It is not necessary to display the menu page that a program appears on to start it up. The two-letter mnemonic is recognized from any page, whether it is visible or not.



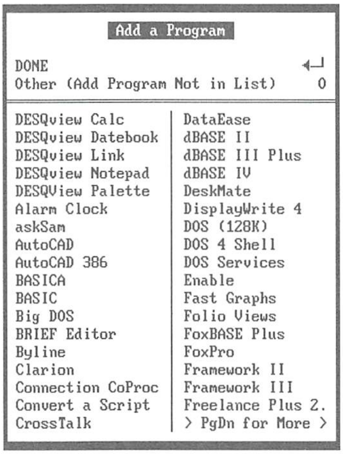
Adding a Program

DESQview's installation procedure searches your hard disk and sets up any of your programs that it knows about—namely all the programs listed on the Add a Program menu.

Programs can also be installed using the Add a Program command. You need to use this command:

- For programs you have that are not known to DESQview.
- For new programs you acquire after you have installed DESQview.
- To install programs the automatic installation procedure misses or installs incorrectly.
- If you do not have a hard disk.

See *pages 100-103* for complete information on these cases.



```
            Add a Program

DONE                                  ◄┘
Other (Add Program Not in List)       0
─────────────────────────────────────────
DESQview Calc       │ DataEase
DESQview Datebook   │ dBASE II
DESQview Link       │ dBASE III Plus
DESQview Notepad    │ dBASE IV
DESQView Palette    │ DeskMate
Alarm Clock         │ DisplayWrite 4
askSam              │ DOS (128K)
AutoCAD             │ DOS 4 Shell
AutoCAD 386         │ DOS Services
BASICA              │ Enable
BASIC               │ Fast Graphs
Big DOS             │ Folio Views
BRIEF Editor        │ FoxBASE Plus
Byline              │ FoxPro
Clarion             │ Framework II
Connection CoProc   │ Framework III
Convert a Script    │ Freelance Plus 2.
CrossTalk           │ > PgDn for More >
```

Deleting a Program

Sometimes, you no longer want to use a program that you have installed in DESQview. When this happens, you can delete it from the Open Window menu using the Delete a Program command.

To delete a program:

- **Display the DESQview menu and select Open Window.**
- Select **Delete a Program.**
- **Select the program you want to delete.**
- **Press ↵ to confirm that you really do want to delete this program.**

Deleting a program from DESQview does not in any way affect the program itself, or any of the program's data files. The program remains unchanged on your hard disk and can still be run outside of DESQview in the usual manner. When a program is deleted from the DESQview menu, its DVP is renamed with a .BAK extension.

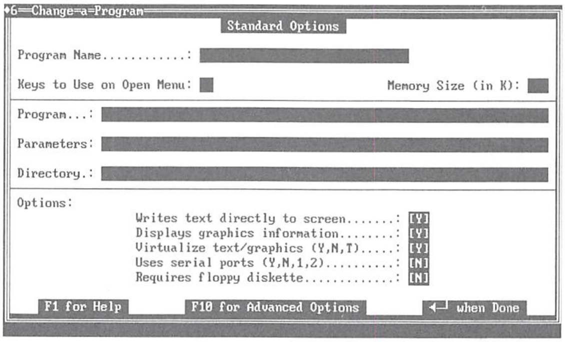
Also see *page 108*.

Changing a Program's Information

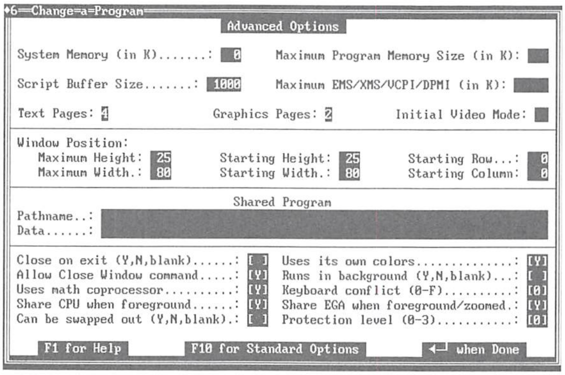
Although DESQview automatically installs most popular programs for you, sometimes you need to change the default (preassigned) settings that DESQview uses—most commonly, to increase the program's memory size or to specify startup parameters.

You do this using the Change a Program menu. Its first page stores basic information about the program. Its second page lists advanced information.

See **Chapter 7,** ***Changing a Program's Information,*** for a complete description.

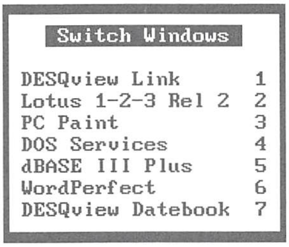


```
Program Name...........: 
Keys to Use on Open Menu:                       Memory Size (in K): 
Program...: 
Parameters: 
Directory.: 
Options:
            Writes text directly to screen.......: [Y]
            Displays graphics information........: [Y]
            Virtualize text/graphics (Y,N,T).....: [Y]
            Uses serial ports (Y,N,1,2)..........: [N]
            Requires floppy diskette.............: [N]
```



```
System Memory (in K).......:    0   Maximum Program Memory Size (in K): 
Script Buffer Size.......: 1000     Maximum EMS/XMS/VCPI/DPMI (in K): 
Text Pages: 4           Graphics Pages: 2          Initial Video Mode: 
Window Position:
   Maximum Height: 25      Starting Height: 25      Starting Row...:  0
   Maximum Width.: 80      Starting Width.: 80      Starting Column:  0
                          Shared Program
Pathname..: 
Data......: 
Close on exit (Y,N,blank)......: [ ]  Uses its own colors.............: [Y]
Allow Close Window command.....: [Y]  Runs in background (Y,N,blank)...: [ ]
Uses math coprocessor..........: [Y]  Keyboard conflict (0-F)..........: [0]
Share CPU when foreground......: [Y]  Share EGA when foreground/zoomed.: [Y]
Can be swapped out (Y,N,blank).: [ ]  Protection level (0-3)...........: [0]
```

Switching Between Windows



The Switch Windows menu is the master list of open windows. You use it to select a new current window.

The **current window** is the window you are currently working on. The program running in the current window is the one that receives and processes your keystrokes.

If you have other windows open, these windows are called **background windows.** Programs in background windows continue to run—if they are permitted to do so—until they require user input.

When you switch back to a background window, it again becomes the current window and receives your input.

If the program running in the window you select is hidden, it reappears. If it is put aside, it is reloaded into memory—possibly causing another program to be put aside.

While swapping is in progress, the message **Swapping...** appears.

Switching Windows (Using the Keyboard)

To switch to another window, using the keyboard:

- **Tap the DESQ key and type S to display the Switch Windows menu.**
- **Select the window you want to switch to from the list that appears.**

The window you select becomes the current window and its frame changes to a double line.

If you want to stop processing in the current window, or wish to prevent it from continuing to run in background when you switch away from it, you can **freeze** it—by using the Freeze command or by pressing the **Ctrl-NumLock** key combination before switching away.

You can also cycle through the set of open windows by tapping the DESQ key twice quickly. Each double tap switches to the next window in turn, excluding windows that have been hidden or put aside.

You can select programs which are hidden or put aside from the Switch Windows menu.

Switching Windows (Using the Mouse)

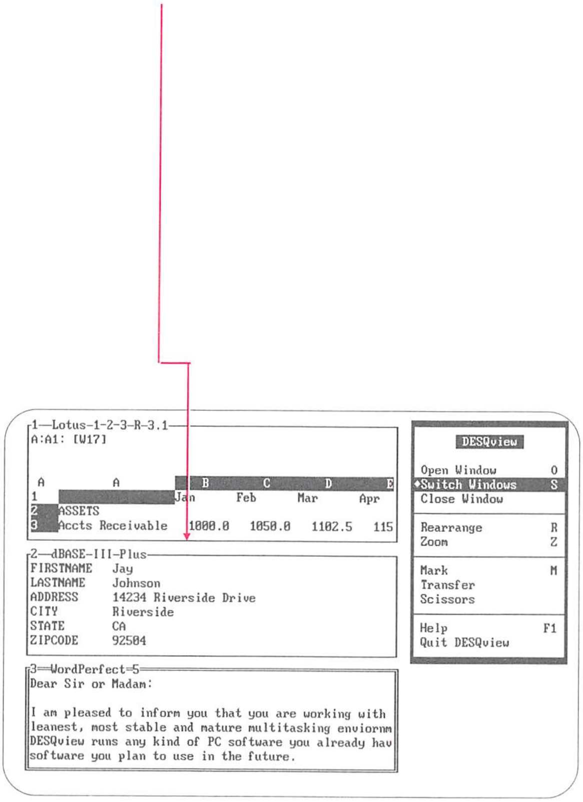
To switch to another window, using the mouse:

- **Click on any visible part of the window you want to switch to.**

If no part of the window is visible:

- **Click the DESQ button to display the DESQview menu.**
- **Click on Switch Windows.**
- **Click on the name of the window you want to switch to.**

You can also cycle through the set of open windows by clicking the DESQ button twice in a row. Each double click switches to the next window in turn, excluding windows that have been hidden or put aside.



```
1—Lotus-1-2-3-R-3.1
A:A1: [W17]

 A          A          B          C          D         E
1                     Jan        Feb        Mar        Apr
2  ASSETS
3  Accts Receivable   1000.0     1050.0     1102.5     115

2—dBASE-III-Plus
FIRSTNAME    Jay
LASTNAME     Johnson
ADDRESS      14234 Riverside Drive
CITY         Riverside
STATE        CA
ZIPCODE      92504

3═WordPerfect═5
Dear Sir or Madam:

I am pleased to inform you that you are working with
leanest, most stable and mature multitasking enviornm
DESQview runs any kind of PC software you already hav
software you plan to use in the future.
```

Shortcut When You Know a Window's Number

If you know the number of the window you want to switch to, there is a keyboard shortcut:

- **Tap the DESQ key to display the DESQview menu.**
- **Type the number of the window you want to switch to.**

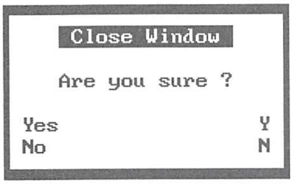
The Switch Windows menu is bypassed.

This shortcut only works for windows 1 through 9. If you have ten or more windows open, you must select the window from the Switch Windows menu.

The first nine windows you open are numbered 1 through 9. The next 26 windows are assigned letters A through Z. Then, the remaining 35 windows are assigned identifiers 01 through 09, then 0A through 0Z.

You can have up to 255 windows open at the same time, allowing for programs that use multiple windows.

Closing a Window



```
Close Window

Are you sure ?

Yes                Y
No                 N
```

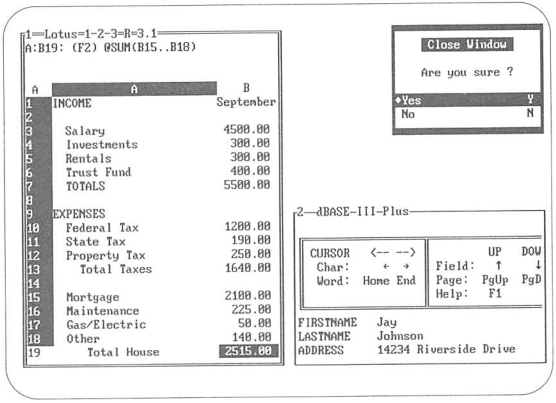
When you are finished working in a program, there are several ways you can close it down:

- Most programs close down automatically when you perform the program's quit command.
- If a program has no quit command, you must terminate using the Close Window command.
- If a program has a quit command, you can often use Close Window as an alternate method of terminating the program.
- You can press Ctrl+Alt+Del to reboot the window (it will not reboot the computer). This usually works, but should be a last resort.

1. Switch to the window you want to close down.

Before performing the Close Window command, be sure to finish whatever you are doing in the program and save any open files.

DESQview closes file handles when you quit DESQview with windows open, but it is always safer to save your files yourself.



```
1=Lotus=1-2-3=R=3.1=
A:B19: (F2) @SUM(B15..B18)

A           A               B
1 INCOME                September
2
3   Salary                4500.00
4   Investments            300.00
5   Rentals                300.00
6   Trust Fund             400.00
7   TOTALS                5500.00
8
9 EXPENSES
10  Federal Tax           1200.00
11  State Tax              190.00
12  Property Tax           250.00
13    Total Taxes         1640.00
14
15  Mortgage              2100.00
16  Maintenance            225.00
17  Gas/Electric            50.00
18  Other                  140.00
19      Total House       2515.00
```

```
Close Window

Are you sure ?
♦Yes               Y
No                 N
```

```
2—dBASE-III-Plus

CURSOR   <-- -->          UP    DOW
 Char:    ←   →   Field:  ↑     ↓
 Word:  Home End  Page:  PgUp  PgD
                  Help:   F1

FIRSTNAME   Jay
LASTNAME    Johnson
ADDRESS     14234 Riverside Drive
```

2. Display the DESQview menu and select Close Window.

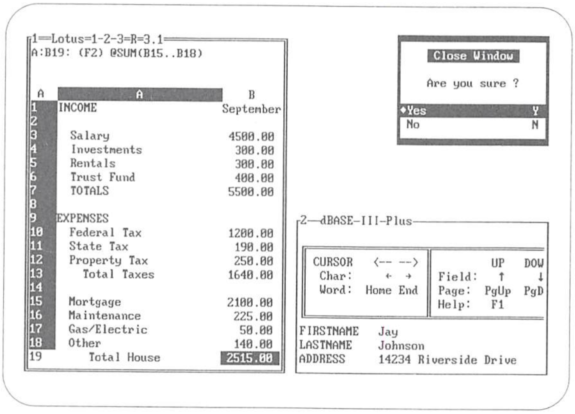
Whether you can use the Close Window command to close down a program depends on:

- How the program's options were set when it was installed in DESQview.
- Whether the program permits you to use Close Window.

You can disallow the Close Window command by setting the **Allow Close Window command** option to OFF (see *page 187*).

Programs written expressly for DESQview may disallow Close Window or interpret it in a special way (see the footnote on *page 45*).

Whether a program should close down automatically when you perform its quit command is controlled by the **Close on exit** option (see *page 187*).



```
1=Lotus=1-2-3=R=3.1
A:B19: (F2) @SUM(B15..B18)

A             A                   B
1  INCOME                     September
2
3    Salary                     4500.00
4    Investments                 300.00
5    Rentals                     300.00
6    Trust Fund                  400.00
7    TOTALS                     5500.00
8
9  EXPENSES
10   Federal Tax                1200.00
11   State Tax                   190.00
12   Property Tax                250.00
13     Total Taxes              1640.00
14
15   Mortgage                   2100.00
16   Maintenance                 225.00
17   Gas/Electric                 50.00
18   Other                       140.00
19     Total House              2515.00
```

```
2—dBASE-III-Plus
 CURSOR   <-- -->             UP   DOW
  Char:    ←   →     Field:   ↑     ↓
  Word:  Home End    Page:   PgUp  PgD
                     Help:    F1
FIRSTNAME    Jay
LASTNAME     Johnson
ADDRESS      14234 Riverside Drive
```

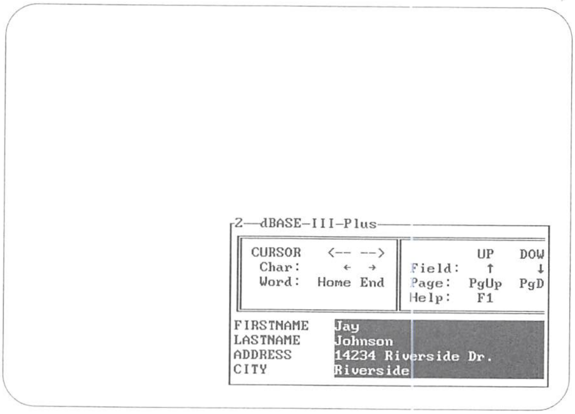
3. Select Yes to confirm that you really want to close the window.

The Close Window menu requires you to confirm that you really mean to close down the current window. This prevents accidentally closing a window.

If you want to be extra safe, you can disallow the Close Window command entirely for a program by setting that program's **Allow Close Window command** option to OFF. Then, the only way to terminate the program is with the program's quit command (or by Ctrl+Alt+Del).

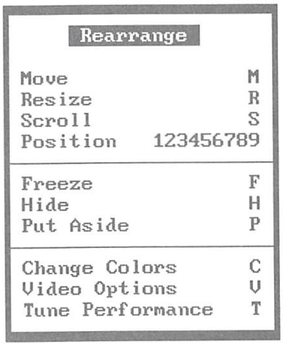
If you change your mind and select **No** (or press the Esc key) instead of selecting **Yes,** the Close Window command is canceled and the program resumes running where it left off.

If you created or changed any scripts, but did not save them, you are asked if you want to save them before closing the window.



```
2—dBASE-III-Plus
 CURSOR   <-- -->             UP   DOW
  Char:    ←   →     Field:   ↑     ↓
  Word:  Home End    Page:   PgUp  PgD
                     Help:    F1
FIRSTNAME    Jay
LASTNAME     Johnson
ADDRESS      14234 Riverside Dr.
CITY         Riverside
```

Rearranging Windows



The Rearrange command lets you control the position, appearance and behavior of the current window. You can:

- Move the window to the position you want, resize it to the size you want, or scroll (align) it as you want.
- Hide the window—or freeze the program running in the window, or put it aside to disk, to RAM disk, or to expanded memory.
- Dynamically tune the window's performance.
- Change the window's colors or video mode.

Move
Resize
(Using the Keyboard)

The Move and Resize commands let you change the position and size of the current window:

- **Select Move or Resize from the Rearrange menu.**
- **Use the arrow keys to move or resize the window, until it is positioned or sized the way you want.**

To alternate between moving and resizing:

- **Type M to start moving (if you are resizing) or R to start resizing (if you are moving).**

When the window has the appearance you want:

- **Press ↵.**

Move
Resize
(Using the Mouse)

You can also move or resize the current window using the mouse:

- **Select Move by clicking on the top frame bar or Resize by clicking on the bottom frame bar.**
- **Move the mouse until the window is positioned or sized the way you want.**

To Alternate between moving and resizing:

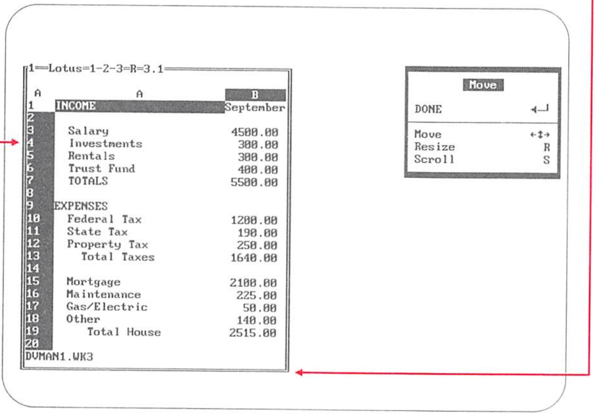
- **Click twice.**

When the window has the appearance you want:

- **Click once to make the mouse cursor reappear on the Move or Resize menu.**
- **Click on any visible part of the current window— or on DONE, if you prefer.**

To **move** the current window using the mouse, click on the top frame bar. Then, as you move the mouse, the window will move.

To **resize** the current window using the mouse, click on the bottom frame bar. Then, as you move the mouse, the window will stretch or shrink.



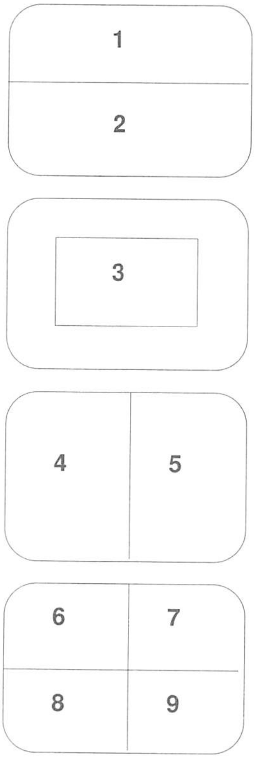
```
1═Lotus═1-2-3═R═3.1═══════════════
 A              A              B
1   INCOME                 September
2
3     Salary                 4500.00
4     Investments             300.00
5     Rentals                 300.00
6     Trust Fund              400.00
7     TOTALS                 5500.00
8
9   EXPENSES
10    Federal Tax            1200.00
11    State Tax               190.00
12    Property Tax            250.00
13       Total Taxes         1640.00
14
15    Mortgage               2100.00
16    Maintenance             225.00
17    Gas/Electric             50.00
18    Other                   140.00
19       Total House         2515.00
20
DVMAN1.WK3
```

Position

The Position command lets you place the current window in one of nine predesignated areas on the screen.

- **Type the number of the area you want, or select that number with the mouse.**

The default areas are shown in the following diagrams. You can change these defaults using the Setup program (see **Appendix A**).



Scroll

When a program is running in a small window, you see only a portion (view) of the full screen that underlies the window.

The view you see depends on the program. For most programs, DESQview keeps the cursor in the window by scrolling when the cursor moves out of the window.

Sometimes, this results in a view that is different than what you need. The Scroll command lets you change this view:

Using the keyboard:

- **Display the Rearrange menu and select Scroll.**
- **Use the arrow keys to scroll the window to the view you want.**
- Select **DONE.**

Or, using the mouse:

- **Click on the right frame bar to display the Scroll menu.**
- **Move the mouse until you have the view you want.**
- **Click twice.**

The window remains scrolled until the next time you type to the program—or until you press the ESC key.

Freeze
Hide
Put Aside

The **Freeze** command has the same effect as pressing the Ctrl-Numlock key; it suspends the program that's running in the current window.

The **Hide** and **Put Aside** commands let you remove a window from the screen without closing it.

Hide removes the window from the screen. The program running in the window continues to run—if it is permitted to run in background.

Put Aside hides the window and then, additionally, suspends the program running in the window and swaps the program out to disk, RAM disk, or expanded memory, (see **Appendix A**).

By **swap** we mean that the program is suspended and all the information about the program in your computer's memory is transferred to disk, RAM disk, or expanded memory so other programs can use that space.

To bring a hidden window back to the screen, switch to the hidden window.

When a program is put aside, it is saved to the SWAP drive (see **Appendix A**) or, if you have not defined that drive, to the drive and directory from which you started up DESQview (most commonly, **C:\DV).**

Change Colors

The Change Colors command lets you change the text and background colors of a character based program running in the current window.

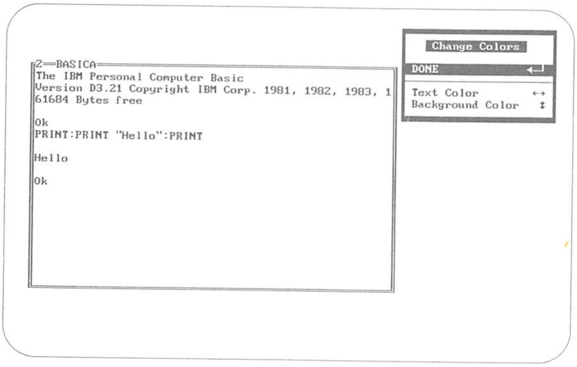
- **Use the left arrow and right arrow keys to change the text color.**
- **Use the up arrow and down arrow keys to change the background color.**

Each press on an arrow key displays the next (or previous) text or background color in sequence.

To change the colors of the DESQview menus, use the Change Colors command when no windows are open.

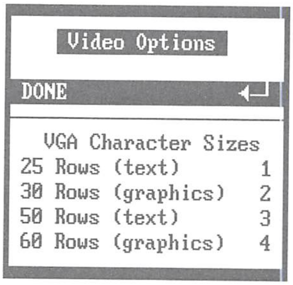
Programs that run full-screen-only impose their own color schemes. This command has no effect on such programs.

The Change Colors command is not available if you are using a monochrome display.



```
The IBM Personal Computer Basic
Version D3.21 Copyright IBM Corp. 1981, 1982, 1983, 1
61684 Bytes free

Ok
PRINT:PRINT "Hello":PRINT

Hello

Ok
```

Video Options Menu

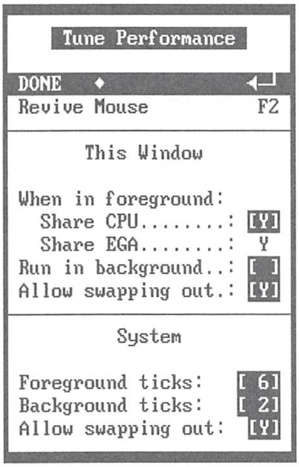


The Video Options menu lets you change text and graphic video modes to take advantage of the capabilities of your display adapter. The Video Options menu is only available if you have an EGA, VGA, MCGA or Hercules display.

Video Options allows you to change the video mode from 25 to 43 lines with EGA and Hercules; from 25 to 30 and 60 lines on an MCGA or from 25 to 30, 50, or 60 lines on a VGA.

Note that DESQview may dynamically change to the video mode best suited to display any graphics programs running.

Tune Performance Menu



```
  Tune Performance

DONE    ◆             ↵
Revive Mouse         F2

      This Window

When in foreground:
  Share CPU........: [Y]
  Share EGA........:  Y
Run in background..: [ ]
Allow swapping out.: [Y]

        System

Foreground ticks:   [ 6]
Background ticks:   [ 2]
Allow swapping out:  [Y]
```

The Tune Performance menu lets you reset your mouse driver and presents options to tune the performance of the current window as well as the overall DESQview system.

You can additionally control whether the current window can be swapped to disk, whether you want it to run in background and whether you want other programs to run in background.

All options set from the Tune Performance menu are active for the current DESQview session only. If you want a particular option to default to a preferred setting, use **Change a Program** for your program. Use the DESQview **Setup** program to change the **System** options.

Revive Mouse

The Revive Mouse option lets you dynamically reset the mouse driver if your mouse has stopped responding. It is assumed that the mouse has already been successfully installed before starting DESQview.

Note that simply pressing the Enter key does not select Revive Mouse on this menu. Enter is the "Done" key. To select Revive Mouse, press the F2 key or highlight Revive Mouse and press the spacebar. You may then tune other options from the fill-in fields below or press Enter to execute Revive Mouse.

If you are using a program which supports a mouse, such as Sidekick 2 or Microsoft Word, that program "owns" the mouse when it is in foreground and will interpret all mouse clicks internally. To transfer control of the mouse back to DESQview, tap the DESQ key.

Share CPU

The Share CPU option tells DESQview to allow other programs to run in background while the current program is in foreground. If you enter No (N) to Share CPU, DESQview will freeze all programs running in background when the foreground program is executing—until you tell DESQview to share the CPU again.

NOTE: If the foreground is not actually computing (waiting for input, for example), then other programs are allowed to process in the background, even with "Share CPU" turned OFF. However, as soon as the foreground program begins executing again, it will have exclusive use of the CPU.

Share EGA (80386 PCs with DESQview 386)

Share EGA tells DESQview to allow other EGA graphics programs to run in background. If you enter No (N) to Share the EGA, DESQview will freeze EGA programs running in background, when the current program is in EGA graphics mode and zoomed to full screen.

Share EGA has no effect unless **Virtualize text/graphics** is ON. See ***page 176***.

If you enter Yes (Y), then all programs using EGA graphics will run somewhat slower. This slowdown occurs because of the work required of DESQview to manage EGA virtualization. Note that virtualization of VGA is much faster than EGA—thereby requiring no special option.

Run in Background

The Run in Background option determines whether the current program can continue to run in background when you switch away from it.

Normally, this option is set to blank, which indicates that DESQview can decide when the program will be permitted to run in background and when it will not. You can explicitly tell DESQview (Y) to run the current program in background or (N) not to run in background.

Allow Swapping Out

The Tune Performance menu has two options for **Allow Swapping Out**. Swapping to disk may be set for both the current program or the system.

The Allow Swapping Out **(This Window)** option controls whether DESQview can swap this program to disk when it needs more memory than is available to run another program. You set this option to no (N) when you want a program to always be in memory.

The Allow Swapping Out **(System)** option instructs DESQview whether or not to swap programs to disk when it needs more memory than is available to run programs. Most often you should disallow swapping on floppy-based systems without expanded memory.

DESQview will swap to EMS if possible, or else to either the swap drive and directory you specified in Setup or, if none is specified, the default drive and directory from which DESQview is run (usually C:\DV).

Foreground and Background Ticks (Time slicing)

The Foreground ticks option lets you control the number of clock ticks that DESQview gives to the foreground program. See ***page 206.***

The Background ticks option lets you control the number of clock ticks that DESQview gives to each background program.

Working with Full-Screen Windows

There are two types of full-screen windows:

- ❑ Programs that are **full-screen-only**—because these programs write directly to the screen and cannot run in small windows (8088 and 80286 processors).[†]
- ❑ Programs that can run in small windows (and in background), that you have zoomed to full-screen, or were started up full-screen.

DESQview comes with special **loaders** that permit many popular full-screen-only programs to run in small windows (see ***page 170***).

Switching to a Full-Screen Window

When you switch to a full-screen window, the program running in that window "takes over" the entire screen. You can no longer see any other windows.

If the program running in the full-screen window is **full-screen-only**, the window uses the program's color.

If the program can run in a small window, the window is displayed in the colors that DESQview assigned to the window—if any. You can specify that the program **Uses its own colors** in the **Change a Program** menu.

If you are running in 43-line mode (or other high-resolution EGA or VGA text mode), a full-screen window for a program that displays 25x80 will appear as a 25x80 window with top and bottom frames but no side frames.

[†] DESQview 386 allows most programs to run in small windows and in background.

Moving, Resizing, or Repositioning a Full-Screen Window

You cannot move a full-screen-only window, but you can resize , then reposition it. If you are running on an 8088 or 80286 PC, when you do so:

- If it is a full-screen-only window, the program running in the window is suspended but can be scrolled for viewing.
- If it is not full-screen-only, the program continues to run in the small window (and in background).

Once you shrink a program that is full-screen-only into a small window, you can manipulate it by using the Rearrange commands: Move, Resize, Position, Scroll, and Change Colors. If you are running on an 8088, 8086 or 80286, the program running in the window remains suspended until you zoom it back to full-screen.

If you are running on an 80386 with QEMM and **Virtualize text/graphics** is ON (see **Chapter 7**) the program will continue to run in the small window and in background.

Running a Program That is Full-Screen-Only in Background

Normally on an 8088, 8086 or 80286 PC, a program that is full-screen-only does not run in background—because any information the program writes to the screen while it's running bleeds through (shows through) into other windows.

Sometimes, however, it is desirable to let it run in background anyway.

The primary example would be a program that computes, sorts, or performs some other time-consuming operation without ever writing to the screen—or, perhaps, only writes a status indicator at a fixed place on the screen.

If you can tolerate the nuisance of having text flash on your screen from time to time, you gain the significant advantage of having a long process proceed in background while you do other work.

To run a program in background, from the **Change a Program** menu, set the **Runs in background** option for the program to Y. It will then run in background when you switch away from it.

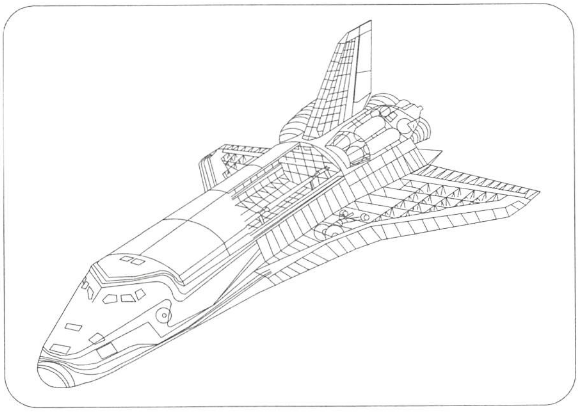
Working with Graphics Windows

DESQview fully supports programs that display graphics information in Hercules, CGA, EGA, and VGA modes.[†]

DESQview can also run itself and most non-graphics (text-only) programs in these modes.

When a program switches to graphics mode, DESQview automatically switches to full-screen (except as noted in the next column).

On an 8088 or 80286 PC, when you switch away from a program that is displaying graphics, DESQview suspends the program. On an 80386 PC, the program continues to run.



Switching to a Graphics Window

When you switch to a program that is displaying graphics information on the screen, DESQview automatically zooms the window to full-screen and switches to the graphics mode the program is using, except:

- On a 386 PC, graphic programs that display graphics can run in small windows so the graphics window will be the same size and position as it was. If you used the Resize or Position command to shrink a graphics window before you switched away, it remains as a small window until you zoom it back to full-screen.

[†] To use graphics, you must have a Hercules, color graphics (CGA), enhanced graphics (EGA), or Video Graphics Array (VGA) display adapter board installed on your system.

Switching Away From a Graphics Window

When you switch away from a graphics window, DESQview tries to avoid switching to a different video mode, if possible.

So, when you tap the DESQ key, DESQview tries to display the DESQview menu in the mode the current window is in.

If this is not possible, DESQview displays the window and the DESQview menu in the most compatible mode.

If you switch between programs in incompatible video modes, DESQview draws the **graphics curtain** over the one you switch away from.

The **graphics curtain** indicates that the program you switched to and the program covered by the curtain cannot both appear on the screen simultaneously because they are running in incompatible video modes.

If the program you switch to is in text mode, DESQview converts the textual information to graphics (if possible), so that both text and graphics programs can appear on the screen at the same time.

Sometimes this may cause a window's colors to change, or a window that is normally color to become black and white.

Palette Changes When Switching Windows

If a program defines its own palette, the palette for the window may change when you switch away from it. DESQview usually remembers the window's palette and will restore it when you return to it.

If a window's palette is not restored, or if you experience a window blinking unexplainably, you can correct this with the **DESQview Palette** program.

First, add DESQview Palette using **Add a Program.** Palette can change or restore a global palette; create, save or load a special palette or set the video **blink** attribute for your system.[†]

Using the Keyboard:

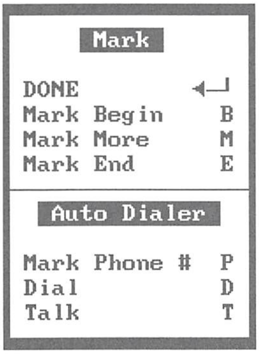
- **The left and right arrow keys move between colors. The up and down arrow keys select the color mix. The grey + and - keys increase and decrease hues. The highlighted letter of each selectable action selects that action.**

Using the Mouse:

- **Click on the color you wish to change. Then click on any of the arrow keys to select and mix colors. Click on the plus or minus symbol to increase or decrease hues. Click on any selectable command to execute it. Click on Quit to exit Palette.**

[†] Palette changes remain in effect for the current session only, unless saved. More information on DESQview Palette is on *page 189.*

Marking and Transferring Information



DESQview lets you transfer character based information from one program to another, even if the programs know nothing of each other.

When you select the Mark command, DESQview takes a snapshot of the full screen that the program has written and then places the program in **mark mode**. You then mark the text you want to transfer from this snapshot.

If you are viewing the program in a small window—that is, in a window that does not occupy the full screen—you can scroll the contents of the snapshot within the small window.

When you have marked the text you want, you switch to the program you want to transfer it to and execute the Transfer command.

See **Chapter 6**, *Advanced Mark and Transfer*, for information on using the Scissors command and on other advanced mark and transfer features.

1. Display the Mark menu.

Using the keyboard:

- **Display the DESQview menu and select Mark.**

Using the mouse:

- **Click on the left frame bar of the current window.**

DESQview takes a snapshot of the screen and places the program in **mark mode**.

The text cursor and the mouse cursor become the same (a blinking underscore) and are locked in the window.

If you try to move the cursor outside the window, the underlying (25x80) snapshot scrolls—if you are working in a small window.

2. Move the cursor to the first character of the text you want to mark and select Mark Begin.

Using the keyboard:

- **Use the arrow keys, Tab, Home, and End to move the cursor to the point where you want to set the begin mark.**
- **Type B.**

Using the mouse:

- **Double click on the character on which you want to set the begin mark.**

Clicking the mouse once moves the mouse cursor to **Mark Begin** on the Mark menu. Clicking it again **selects Mark Begin**.

The character on which you set the begin mark appears in reverse video—that is, its text and background colors are reversed. As you move the cursor, the rectangle defined by the begin mark and the current cursor location appears in reverse video to indicate the block of text being marked.

3. Move the cursor to the last character of the block of text and select DONE.

Using the keyboard:

- **Use the arrow keys, Tab, Home, and End to move the cursor to the point where you want to set the end mark.**
- **Press ↵,**

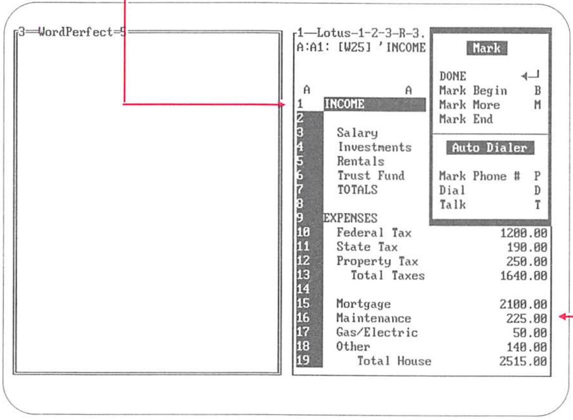
Using the mouse:

- **Double click on the character on which you want to set the end mark.**

Clicking the mouse once moves the mouse cursor to **DONE** on the Mark menu. Clicking it again **selects DONE.**

On selecting **DONE,** the reverse video marking is removed and the Mark menu disappears. The block of text you marked is saved in a buffer until you are ready to transfer it.

The use of the Mark More and Mark End commands are explained in **Chapter 6**. The use of the Auto Dialer is explained on ***pages 93-95.***



```
A:A1: [W25] 'INCOME

 A                A
1  INCOME
2
3    Salary
4    Investments
5    Rentals
6    Trust Fund
7    TOTALS
8
9  EXPENSES
10   Federal Tax                 1200.00
11   State Tax                    190.00
12   Property Tax                 250.00
13     Total Taxes               1640.00
14
15   Mortgage                    2100.00
16   Maintenance                  225.00
17   Gas/Electric                  50.00
18   Other                        140.00
19      Total House              2515.00
```

4. Switch to the program to which you want to transfer the block of text you marked.

Using the keyboard, for windows 1 through 9:

- **Display the DESQview menu and type the number of the window you want to switch to or:**

Using the keyboard, for windows 10 and above:

- **Display the Switch Windows menu and select the window you want to switch to.**

Using the mouse, if part of the window or its frame is visible:

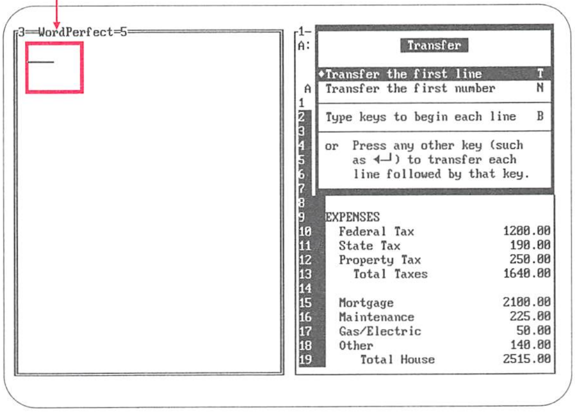
- **Click on the visible part of the window.**

The window you selected becomes the current window.

If you want, you can transfer the text you marked back into the same program.

5. Move the cursor to the point where you want to transfer the text you just marked.

You do this using the program's commands for positioning the cursor.


3═WordPerfect═5
1
A:
Transfer
♦Transfer the first line T
Transfer the first number N
Type keys to begin each line B
A

or Press any other key (such as ◄┘) to transfer each line followed by that key.

```
1
2
3
4
5
6
7
8
9  EXPENSES
10   Federal Tax          1200.00
11   State Tax             190.00
12   Property Tax          250.00
13     Total Taxes        1640.00
14
15   Mortgage             2100.00
16   Maintenance           225.00
17   Gas/Electric           50.00
18   Other                 140.00
19     Total House        2515.00
```

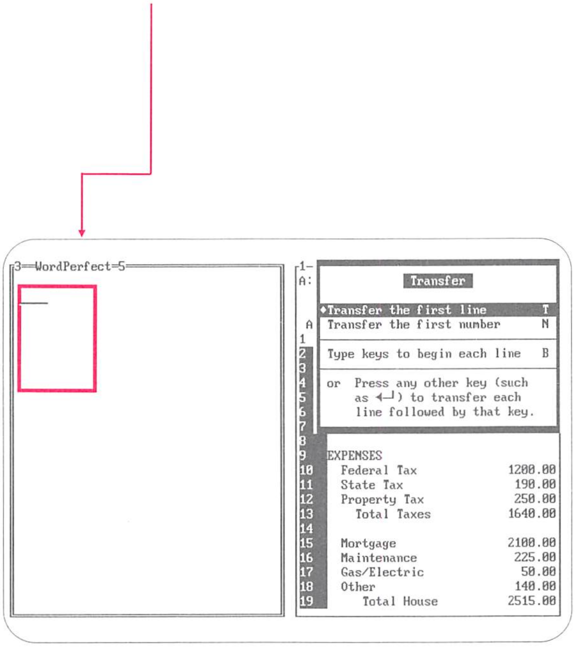
6. Display the DESQview menu and select Transfer.

The Transfer menu appears. There are four options:

- You can transfer only the first line of the block you marked into the program.
- You can transfer only the first number you marked.
- You can specify keys to be typed before each line you marked.
- You can tell DESQview to type the lines you marked followed by any key or sequence of keys. Just press ↵ to transfer the block of text you marked into the program in the same format.

Note that the text in the transfer buffer remains there until overwritten or until you terminate your DESQview session. You may transfer this text as many times, and to as many windows as you wish.

See **Chapter 6**, *Advanced Mark and Transfer*, for other uses of these options.


3=WordPerfect=5
1
A:
Transfer
♦Transfer the first line T
Transfer the first number N
Type keys to begin each line B

or Press any other key (such as ↵) to transfer each line followed by that key.

```
A
1
2
3
4
5
6
7
8
9   EXPENSES
10    Federal Tax          1200.00
11    State Tax             190.00
12    Property Tax          250.00
13      Total Taxes        1640.00
14
15    Mortgage             2100.00
16    Maintenance           225.00
17    Gas/Electric           50.00
18    Other                 140.00
19       Total House       2515.00
```

7. Press ↵.

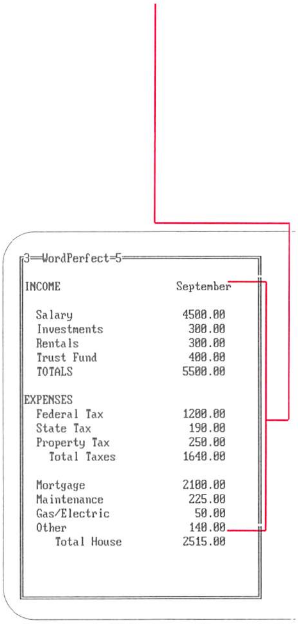
DESQview types the marked text into the program—just as if you had typed it yourself from the keyboard.

Since you pressed ↵, each line is terminated by a carriage return—with the result that the block of text is transferred in the same format as it was marked.

Some other common cases are:

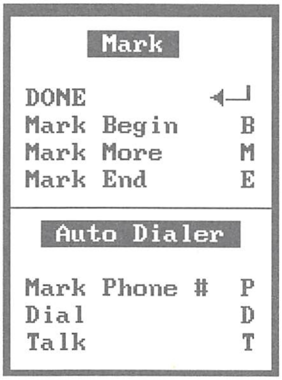
- To transfer text to a word processor with automatic wordwrap, use the spacebar instead of ↵.
- To transfer a column of numbers into a spreadsheet program (without filtering) use the down arrow instead of ↵.

The **Transfer the first number** option has a special property: the number is filtered to remove all non-numeric characters except periods and minus signs, and a left parentheses is converted to a minus sign. This filtering is useful because most spreadsheet programs will not accept numbers with embedded commas, dollar signs, or other characters.



```
INCOME                         September

  Salary                         4500.00
  Investments                     300.00
  Rentals                         300.00
  Trust Fund                      400.00
  TOTALS                         5500.00

EXPENSES
  Federal Tax                    1200.00
  State Tax                       190.00
  Property Tax                    250.00
    Total Taxes                  1640.00

  Mortgage                       2100.00
  Maintenance                     225.00
  Gas/Electric                     50.00
  Other                           140.00
     Total House                 2515.00
```

Using the Auto Dialer



An added feature of the Mark command is the ability to have DESQview automatically dial a phone number from information in the current window.

To use the Auto Dialer, you must have a modem that is attached to your system and connected in parallel to your telephone line using a standard "T" adapter. You can:

- Have DESQview search the current window for a phone number and then mark this number.
- Have DESQview dial the marked number.
- Have DESQview precede the number you marked by any one of three access codes.

DESQview assumes that you have a Hayes modem (or compatible) attached to communications port 1. By running the Setup program (see **Appendix A**), you can:

- Override the assumption that you have a Hayes modem and specify the protocol your modem uses—for many modems.
- Specify the communications port your modem is attached to.
- Specify the three access codes you want, giving each a name that will appear on the Dial menu. For example, you could specify that the name "**Sprint**" is to appear on the Dial menu and that it is to dial the access code "**9,950-0777,29386072**" (A comma causes a Hayes modem to wait for one second.)

1. Display the Mark menu.

Using the keyboard:

- **Display the DESQview menu and select Mark.**

Using the mouse:

- **Click on the left frame bar of the current window.**

For additional information on marking text, see *page 89.*

2. Move the cursor before the phone number you want to dial.

You can put the cursor on the first character of the phone number or anywhere before the number. **Mark Phone #** sees a **phone number** as a string of three or more digits. The number ends when DESQview finds two spaces, a letter, or any symbol except:

- / ( ) . : , * # $ % & + ;

If you have a Hayes modem, the symbols comma (,) and semicolon (;) have special meanings (see the Hayes Commands table on the next page). The other symbols listed above are ignored.

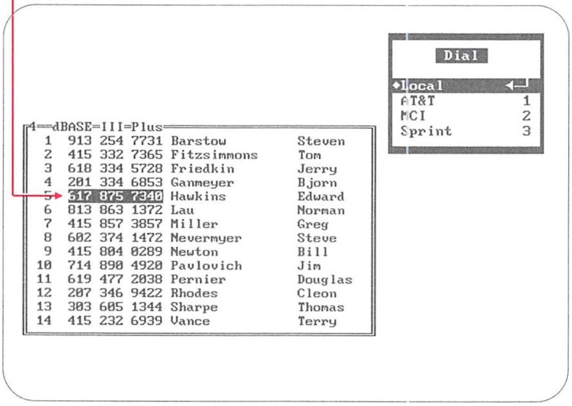
Some examples of valid phone numbers are:

828-5103
(213)373-5910
9,,1-800-353-2945
212 777-1440
011-44-338-382844

3. Select Mark Phone #.

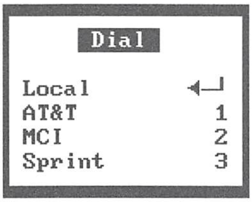
DESQview searches forward from the cursor until it finds a phone number. Then it marks that number.

You can also mark a phone number manually, using the Mark Begin and Mark End commands. You might want to do this to send modem commands that contain embedded letters or other symbols not recognized by DESQview.



```
4══dBASE═III═Plus══════════════════════════════
  1  913 254 7731 Barstow             Steven
  2  415 332 7365 Fitzsimmons         Tom
  3  618 334 5728 Friedkin            Jerry
  4  201 334 6853 Ganmeyer            Bjorn
  5→ 617 875 7340 Hawkins             Edward
  6  813 863 1372 Lau                 Norman
  7  415 857 3857 Miller              Greg
  8  602 374 1472 Nevermyer           Steve
  9  415 804 0289 Newton              Bill
 10  714 890 4920 Pavlovich           Jim
 11  619 477 2038 Pernier             Douglas
 12  207 346 9422 Rhodes              Cleon
 13  303 605 1344 Sharpe              Thomas
 14  415 232 6939 Vance               Terry
```

4. Select Dial.



The Dial menu appears:

The **local** option is listed first. The other three options depend on how you have customized the Dial menu to your personal needs.

The words **Access Code n** initially appear on the Dial menu after the **Local** option. Each specifies that DESQview should send **1** prior to the number you marked.

To personalize the access codes, run the Setup program—see **Appendix A**. You can specify both a name to replace **Access Code n** on the menu and a phone number or dialing command to send instead of **1**.

5. Select Local or the access code you want.

The Mark menu reappears. Then DESQview dials the number you marked.

If you selected **Local,** the number is dialed exactly the way you marked it.

If you selected one of the access codes, DESQview first sends the access code to the modem, then the number you marked.

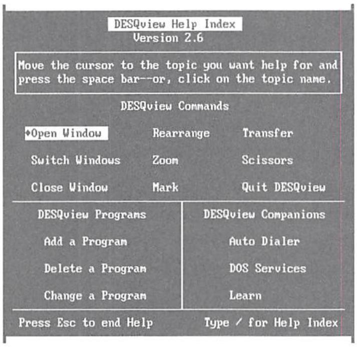
If your modem has a speaker, you will hear the dialing sequence as DESQview performs it.

6. Select Talk.

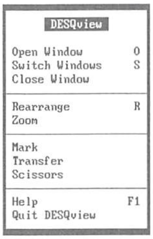
Once the phone you dialed starts ringing, pick up the receiver and select **Talk** to disconnect the modem. The Mark menu disappears. You can now talk normally.

If you get a busy signal, select **Talk** to disconnect the modem and hang up.

Getting Help



```
DESQview Help Index
    Version 2.6

Move the cursor to the topic you want help for and
press the space bar--or, click on the topic name.

              DESQview Commands

 Open Window       Rearrange      Transfer

 Switch Windows    Zoom           Scissors

 Close Window      Mark           Quit DESQview

 DESQview Programs          DESQview Companions

   Add a Program                Auto Dialer

   Delete a Program             DOS Services

   Change a Program             Learn

Press Esc to end Help       Type / for Help Index
```



```
  DESQview

Open Window      O
Switch Windows   S
Close Window

Rearrange        R
Zoom

Mark
Transfer
Scissors

Help            F1
Quit DESQview
```

Help gives you immediate, online assistance for a DESQview command or for a program. The wording of the Help line on the DESQview menu indicates which type of help is available:

- **Help** indicates that the help now available is for DESQview.
- **Help for Program** indicates that the program running in the current window was written expressly for DESQview and that a request for help will give help for this program.

Help for built-in DESQview programs and for DESQview Companions[†] is context-sensitive. For example, if you request help when the Rearrange menu is displayed, you receive help for Rearrange.

To get help, the DESQview Help file must be in the **DV** directory (see **Appendix G**) and the Help file for each DESQview Companion must be in the directory that the companion was started up from. If you are using a floppy-based system, you must put your everyday DESQview diskette in the drive from which you started DESQview before you can use the help system (see **Appendix D**).

Help for DESQview-specific programs not written by Quarterdeck may have different formats than DESQview Help. The design of Help is up to the program developer.

[†] Such as Add a Program, Change a Program, and DESQview Companions (Datebook, DOS Services, Link, Notepad, and so forth).

Displaying the Master Help Index for DESQview

The Master Help Index for DESQview (shown to the left) is the complete list of major help topics for DESQview. It lists help for the commands on the DESQview menu and for the built-in DESQview programs and Companions.

To display the master index, display the DESQview menu as follows:

If the Help line reads **Help for DESQview:**

- **Press F1 or click on Help.**

If the Help line reads **Help for Program:**

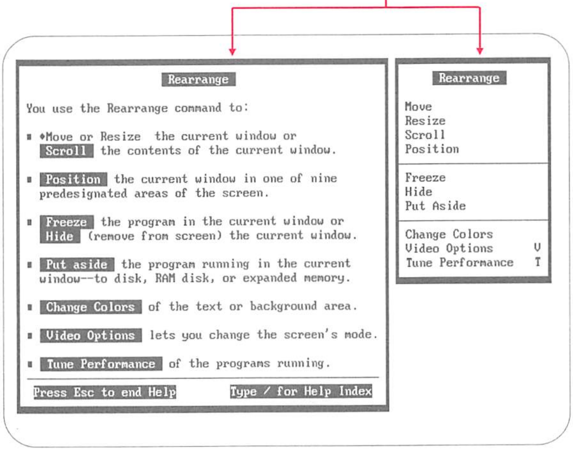
- **Display another DESQview menu—for example, the Open Window menu.**
- **Press F1 to display Help for that menu.**
- **Type / or click on Type / for Help Index.**

Getting Help for a Particular DESQview Command

To get help for a particular DESQview command—or help for a built-in DESQview program command or for a DESQview Companion command:

- **Display the menu that contains the command you want help for.**
- **Press F1.**

Each DESQview Companion also has a Master Help Index. Another method of getting help is to display this master index and then page down through the list of topics to the information you want.



```
                    Rearrange

You use the Rearrange command to:

■ ♦Move or Resize  the current window or
  Scroll  the contents of the current window.

■ Position  the current window in one of nine
  predesignated areas of the screen.

■ Freeze  the program in the current window or
  Hide  (remove from screen) the current window.

■ Put aside  the program running in the current
  window--to disk, RAM disk, or expanded memory.

■ Change Colors  of the text or background area.

■ Video Options  lets you change the screen's mode.

■ Tune Performance  of the programs running.

Press Esc to end Help            Type / for Help Index
```

Selecting a Topic

The Help window displays information specific to the DESQview or program command you were using, and may list additional topics related to this command.

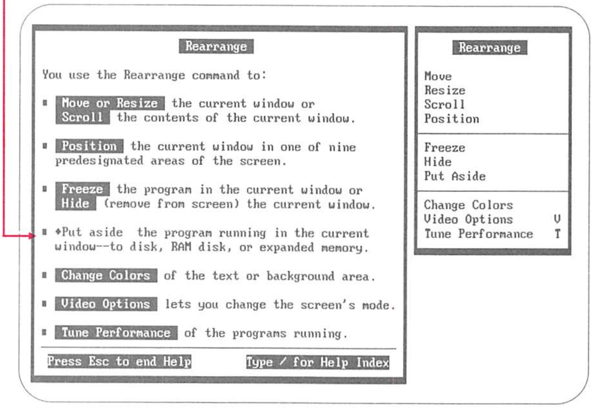
Additional topics are shown as green boxes, and the currently selected topic is indicated by a brown box. On a monochrome display, additional topics are shown in reverse video boxes, and the selected topic is highlighted.

To get help for a particular topic of interest, using the keyboard:

- **Use the arrow keys to move the brown box to the entry that identifies the topic you want.**
- **Press the spacebar.**

Or, using the mouse:

- **Click on the topic you want.**



```
                 Rearrange

You use the Rearrange command to:

▪ Move or Resize  the current window or
  Scroll  the contents of the current window.

▪ Position  the current window in one of nine
  predesignated areas of the screen.

▪ Freeze  the program in the current window or
  Hide  (remove from screen) the current window.

▪ ♦Put aside  the program running in the current
  window--to disk, RAM disk, or expanded memory.

▪ Change Colors  of the text or background area.

▪ Video Options  lets you change the screen's mode.

▪ Tune Performance  of the programs running.

Press Esc to end Help          Type / for Help Index
```

Moving Between Topic Levels

A Help window may display information for a particular command or topic, provide a further list of subtopics, or both.

The structure of DESQview Help is a tree. Each time you select a Help topic, you walk along a particular branch of that tree.

In general, you cannot walk backwards down the tree. Once you select Help for a topic—for example, the Rearrange command, you can only move to related subtopics—for example, the Move command, the Resize command, and so forth.

To get help for another topic, just type /, or click on **Type / for Help Index**, to redisplay the Master Help Index.

Terminating Help

To terminate Help, once you have finished reading about the command or topic of interest, using the keyboard:

- **Press the Esc key.**

Or, using the mouse:

- **Click on Press Esc to end Help.**

The Help window is removed and you resume running the program in the current window.

While you are getting help for a program, it continues to run in background—if it is permitted to do so. If you want to prevent it from running while you get help, use the Freeze command or press Ctrl-NumLock before requesting help.

Getting Help for a Program

When the Help line on the DESQview menu reads **Help for Program**, selecting Help gives help for the program running in the current window rather than help for DESQview.

The DESQview menu can only be used to obtain program-specific help for programs written expressly for DESQview.

When the program is a built-in DESQview program or a DESQview Companion, the Help window has the format and follows the same rules as described in this section and elsewhere in this manual.

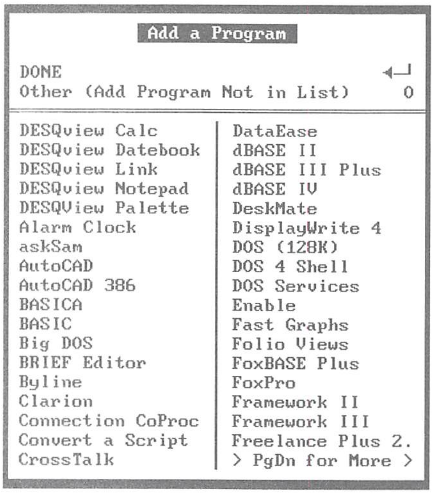
When the program is a DESQview-specific program **not written by Quarterdeck,** its Help window may have a different format and it may follow different rules. The design of program-specific Help is up to the program developer.

The Help file for DESQview and the built-in DESQview programs are contained in **DESQVIEW.DVH**.

The Help files for DESQview Companions are contained in individual Help files for each Companion—**DCHELP.DVH, DDHELP.DVH,** and so forth.

The naming conventions and rules for Help files for programs not written by Quarterdeck are up to the program developer.

Adding a Program



```
                 Add a Program

DONE                                        ◄┘
Other (Add Program Not in List)              O

DESQview Calc          │ DataEase
DESQview Datebook      │ dBASE II
DESQview Link          │ dBASE III Plus
DESQview Notepad       │ dBASE IV
DESQView Palette       │ DeskMate
Alarm Clock            │ DisplayWrite 4
askSam                 │ DOS (128K)
AutoCAD                │ DOS 4 Shell
AutoCAD 386            │ DOS Services
BASICA                 │ Enable
BASIC                  │ Fast Graphs
Big DOS                │ Folio Views
BRIEF Editor           │ FoxBASE Plus
Byline                 │ FoxPro
Clarion                │ Framework II
Connection CoProc      │ Framework III
Convert a Script       │ Freelance Plus 2.
CrossTalk              │ > PgDn for More >
```

Before you can run a program in DESQview, you must give DESQview some basic information about the program—its name, the DOS command that starts it up, how much memory it needs, and on what drive and directory it is stored.

To make this as easy as possible, DESQview comes with the necessary information (except drive and directory) already set up for many popular programs. All you need do is tell DESQview which programs you want to use by marking the names of those programs on the Add a Program menu.

When you install DESQview, the hard disk on which you installed DESQview is automatically searched for all the programs listed on the Add a Program menu and each program found is then installed for you. You can additionally use AUTOINST (see *page 21*) to automatically install programs on another hard disk. Thus, the main uses of Add a Program are:

- To install programs that DESQview does not already know about—using the Other command (see *pages 104-107*).
- To install programs the automatic installation procedure misses or installs incorrectly (see *Note 4, page 21*).
- To install programs acquired after you install DESQview.
- To install programs on a dual-floppy system—see **Appendix D**.

1. Display the DESQview menu and select Open Window. Then select Add a Program.

Since Add a Program is itself a program, it takes a moment to load.

Then the Add a Program menu appears, along with a window explaining how to mark the programs you want to add.

If you are using a floppy-based system you must put your everyday DESQview diskette in the drive from which you started DESQview before you select Add a Program—see **Appendix D.**

2. Mark the programs you want to install in DESQview—or, if the program you want is not listed, select Other.

To mark a program using a keyboard:

- **Use the arrow keys to move the menu cursor until it appears on the program name you want to mark.**
- **Press the spacebar.**

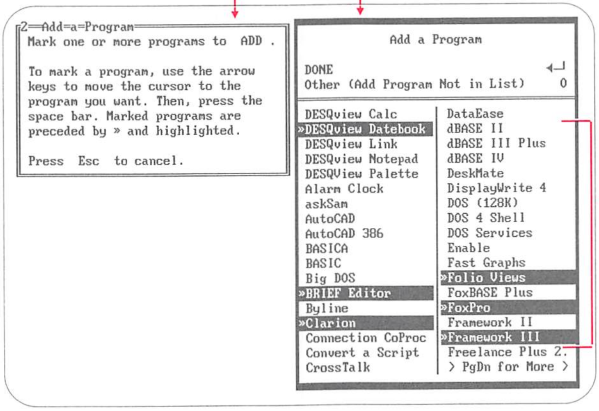
Or, using the mouse:

- **Click on the program name you want.**

When you select a name, it is preceded by » and highlighted. If you change your mind, select the name again to unmark it. You may mark as many names as you like.

If the program you want is not listed, select **Other** to display the Add OTHER Program menu (see *pages 104-107*).

If the entry **PgDn for More** appears at the end of the list, press PgDn to see additional entries.



```
2══Add═a═Program═══════════════════
 Mark one or more programs to  ADD .

 To mark a program, use the arrow
 keys to move the cursor to the
 program you want. Then, press the
 space bar. Marked programs are
 preceded by » and highlighted.

 Press  Esc  to cancel.
```

```
                Add a Program

 DONE                                  ◄┘
 Other (Add Program Not in List)        0

 DESQview Calc          DataEase
»DESQview Datebook      dBASE II
 DESQview Link          dBASE III Plus
 DESQview Notepad       dBASE IV
 DESQView Palette       DeskMate
 Alarm Clock            DisplayWrite 4
 askSam                 DOS (128K)
 AutoCAD                DOS 4 Shell
 AutoCAD 386            DOS Services
 BASICA                 Enable
 BASIC                  Fast Graphs
 Big DOS               »Folio Views
»BRIEF Editor           FoxBASE Plus
 Byline                »FoxPro
»Clarion                Framework II
 Connection CoProc     »Framework III
 Convert a Script       Freelance Plus 2.
 CrossTalk              > PgDn for More >
```

3. Select DONE.

Selecting **DONE** starts installing all the programs you marked into DESQview.

You must answer one question for each program: Where is that program stored?

To obtain this information, DESQview displays the Program Location menu for each program you marked, in turn.

4. Type the drive and directory where you have stored the indicated program.

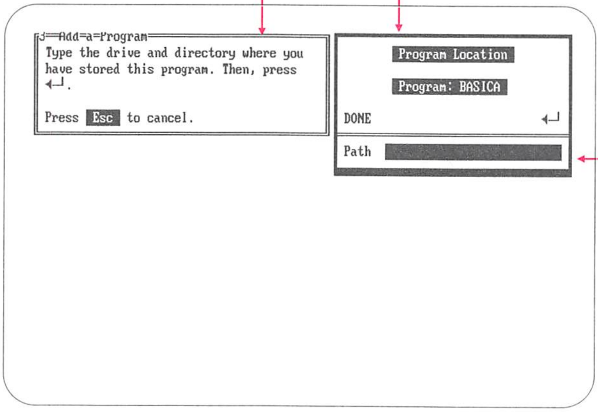
If the program is stored on your hard disk, type the drive letter of your hard disk and the name of the directory in which the program is stored. For example:

C:\LOTUS3

If the program is to be run from diskette, type:

A:\ or B:\

You can install the same program as many times as you wish. The only restriction is that each instance must be identified by different keys on the Open Window menu. If you install a program with conflicting keys, you will be asked to choose new keys.



```
3═Add═a═Program═
Type the drive and directory where you
have stored this program. Then, press
↵.

Press Esc to cancel.
```

5. Select DONE.

The indicated program is installed in DESQview and its name added to the Open Window menu—in alphabetical order.

The program is now operational in DESQview—if you have installed the program itself on your system according to the program manufacturer's instructions.

REMEMBER: Before a program will work on your computer, you must install it according to the installation instructions given in the user's manual for the program. The Add a Program command only tells DESQview about the program. It does not make the program operational on your system. Only you can do this.

6. Complete steps 4 and 5 again for each of the other programs you marked.

After you complete the Program Location menu for the first program you marked, this menu will reappear again for the second program—and so forth, until you have input program location for all the programs you marked.

After you supply the path information for the last program marked, a menu appears asking if you want to add any more programs at this time. If you do not:

- **Select DONE.**

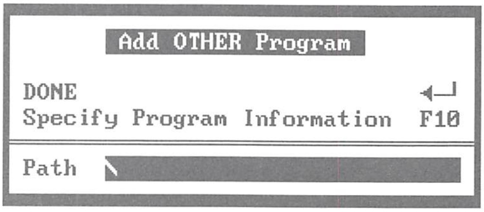
To see the results of your actions, display the Open Window menu:

- **Display the DESQview menu.**
- **Select Open Window.**

Then, if you want to start up one of the programs you just installed:

- **Select the program you want to start up.**

Other: Adding Your Own Program



If the program you want to install in DESQview is not listed on the Add a Program menu, you can add it using the Add OTHER Program menu. The steps you need to perform depend on whether you have a program information file for the program:

- If you have a DESQview Program Information File (DVP) or a Microsoft Windows Program Information File (PIF) for the program, DESQview will use that information file.
- If you do not have a DVP or PIF, you must enter the information DESQview needs.

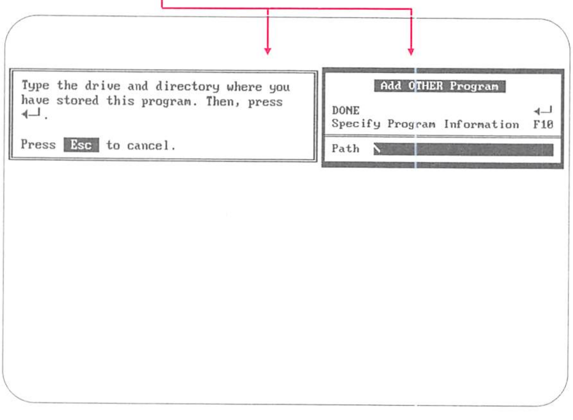
DESQview will automatically determine for you whether a DVP or PIF for the program exists either in the DESQview directory or on the hard disk directory or program diskette you specify:

- If any DVPs or PIFs exist on disk, DESQview lists them on the Add a Program menu. You then select the programs you want to install from this list—in the normal manner described on the preceding four pages.
- If DESQview does not find any DVPs or PIFs, it displays the Specify Program Information menu. To install your program, enter the information requested and set the options to the correct values.

1. Display the Add a Program menu and select Other.

The Add OTHER Program menu appears, with instructions explaining how to use the menu in a window to its left.

If you know there is no DVP or PIF for the program, you can bypass the next two steps by pressing the F10 key to display the Specify Program Information menu. Continue with step 4.



Type the drive and directory where you have stored this program. Then, press ↵.

Press Esc to cancel.

2. Type in the Path field the drive and directory where the program you want to install is stored.

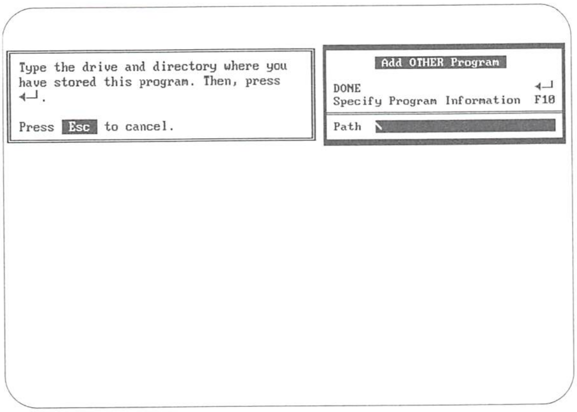
If the program is stored on your hard disk, type the drive letter of your hard disk and the name of the directory in which the program is stored. For example:

C:\dBASEIV

If the program is to be run from diskette, type:

A:\ or B:\

If you specify drive A or B, be sure to put the program diskette in this drive before you select **DONE** in the next step—step 3.



```
Type the drive and directory where you
have stored this program. Then, press
←┘.

Press  Esc  to cancel.
```

```
        Add OTHER Program

DONE                              ←┘
Specify Program Information      F10

Path
```

3. Select DONE.

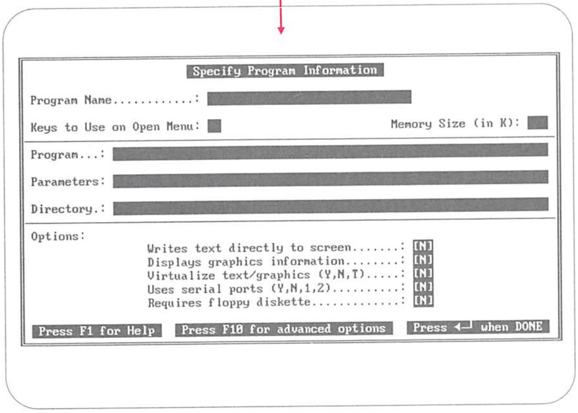
DESQview examines the path you specified in the Path field for information files—that is, for files with the extensions **DVP** and **PIF**.

If any information files are found, the Add a Program menu is redisplayed—with a list of the programs specified by these information files replacing the standard list of programs. Ignore the remaining steps on this page and, instead, complete the Add a Program menu as described on ***pages 100-103***.

If you install a program using a PIF, DESQview creates a DVP for it on the drive and directory from which you started DESQview (most commonly, C:\DV).

If no program information files are found, the Specify Program Information menu appears.

The Specify Program Information menu is identical to the Change a Program menu, except for its name. See **Chapter 7** for more information.



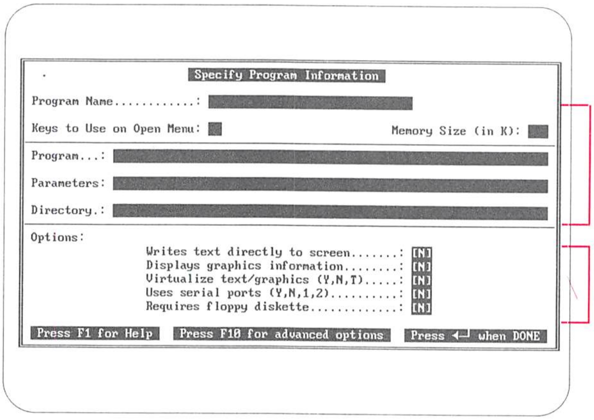
```
                    Specify Program Information

Program Name............:

Keys to Use on Open Menu:                       Memory Size (in K):

Program...:

Parameters:

Directory.:

Options:
                 Writes text directly to screen.......: [N]
                 Displays graphics information........: [N]
                 Virtualize text/graphics (Y,N,T).....: [N]
                 Uses serial ports (Y,N,1,2)..........: [N]
                 Requires floppy diskette.............: [N]

 Press F1 for Help   Press F10 for advanced options   Press ←┘ when DONE
```

4. Complete the six fill-in fields.

- Enter in the **Program Name** field the name you want to appear on the Open Window menu.
- Enter in the **Keys to Use on Open Menu** field the two characters you want to use to start up the program.
- Enter in the **Memory Size (in K)** field the minimum amount of memory needed to run the program.
- Enter in the **Program** field the DOS command you use to start up the program.
- Enter in the **Parameters** field any parameters you want passed to the program. Entering "**?**" here will cause DESQview to pause and wait for you to enter parameters before the program is started.
- Enter in the **Directory** field the drive and directory where the program's data is stored.

5. Set the five options ON(Y) or OFF(N), as is appropriate for the program.

- Turn OFF **Writes text directly to screen** if the program does not write directly to the screen and can thus run in a small window.
- Turn ON **Displays graphics information** if the program ever writes graphics information on the screen.
- **Virtualize text/graphics** will be set automatically for your machine. For more information, see Chapter 7, *Changing a Program's Information.*
- Turn ON **Uses Serial Ports** as follows: "Y" if the program uses all serial ports ; 1, if it uses COM1; 2, if it uses COM2.
- Turn ON **Requires floppy diskette** if you want DESQview to remind you to load the program diskette each time you start up the program.



```
                     Specify Program Information
Program Name............:
Keys to Use on Open Menu:                          Memory Size (in K):
Program...:
Parameters:
Directory.:
Options:
                 Writes text directly to screen.......: [N]
                 Displays graphics information........: [N]
                 Virtualize text/graphics (Y,N,T).....: [N]
                 Uses serial ports (Y,N,1,2)..........: [N]
                 Requires floppy diskette.............: [N]
```

6. Press ↵ to complete installation of the program into DESQview.†

The program is installed in DESQview and its name is added to the Open Window menu—in alphabetical order—above Add a Program.

Then a menu appears asking if you want to add any more programs at this time. If you do not:

- Select **DONE.**

REMEMBER: Before a program will work on your computer, you must install it according to the installation instructions given in the user's manual for the program. The Add a Program command only tells DESQview about the program. It does not make the program operational on your system. Only you can do this.

The Specify Program Information menu has two pages of information. The preassigned values DESQview uses for the fields and options on the second page are correct for most programs. For more information, see **Chapter 7, *Changing a Program's Information.***

---

† If you change your mind, and decide you do not want to complete program installation, press ESC rather than ↵.

Deleting a Program

If you no longer want to use a program in DESQview, you can delete it using the Delete a Program command.

Deleting a program removes it from the Open Window menu and discards all the knowledge DESQview has about the program. The program itself is not affected and will continue to run in DOS in its usual manner.

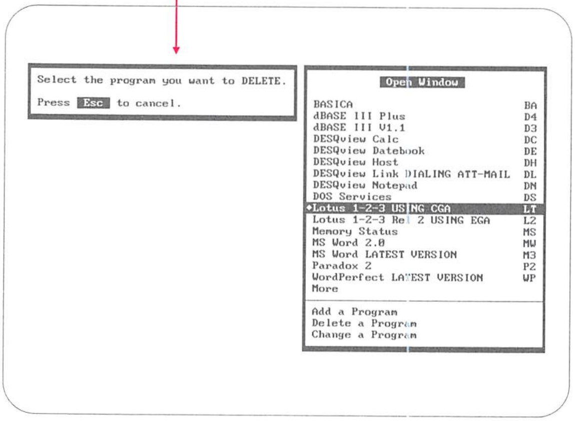
Rather than deleting the DESQview Program Information File (DVP) for the program, DESQview changes its file extension from **DVP** to **BAK.** This removes DESQview's knowledge of the program but leaves the DVP intact, under a different name.

If you change your mind at a later time, you can restore the program with the same settings by changing the file extension from BAK to DVP and then using the Add OTHER Program command to reinstall it.

1. Display the DESQview menu and select Open Window. Then select Delete a Program.

The Open Window menu remains on the screen and instructions appear in a window to its left telling you to select the program you want to delete from DESQview.

If you are using a floppy-based system, you must put your everyday DESQview diskette in the drive from which you started DESQview before you select the program to delete—see **Appendix D**.



Select the program you want to DELETE.

Press Esc to cancel.

2. Select the program you want to delete.

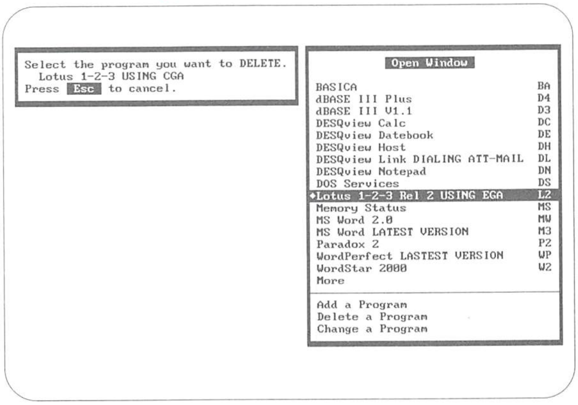
To select the program you want to delete, using the keyboard:

- **Type the two characters to the right of the program name.**

Or, using the mouse:

- **Click on the name of the program you want to delete.**

New instructions appear in the window to the left of the Open Window menu asking you to confirm that you really want to delete the program you selected.



```
Select the program you want to DELETE.
  Lotus 1-2-3 USING CGA
Press Esc to cancel.
```

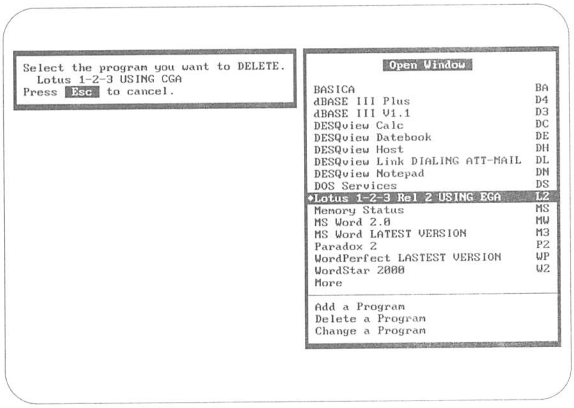
3. Confirm that you have chosen the correct program by pressing ↲.

The program is removed from the Open Window menu and Delete a Program terminates.

If you have selected the wrong program, or changed your mind about deleting the program:

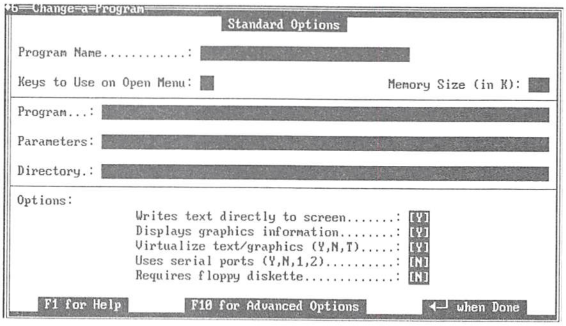
- **Instead of pressing ↲, press Esc to cancel the Delete a Program command.**

The Open Window menu remains on the screen.



```
Select the program you want to DELETE.
  Lotus 1-2-3 USING CGA
Press Esc to cancel.
```

Changing a Program's Information



```
♦6══Change═a═Program═══════════════════════════════════════════
                    Standard Options
 Program Name............:
 Keys to Use on Open Menu:                    Memory Size (in K):
 Program...:
 Parameters:
 Directory.:
 Options:
                 Writes text directly to screen.......: [Y]
                 Displays graphics information........: [Y]
                 Virtualize text/graphics (Y,N,T).....: [Y]
                 Uses serial ports (Y,N,1,2)..........: [N]
                 Requires floppy diskette.............: [N]
      F1 for Help        F10 for Advanced Options        ◄┘ when Done
```

The Change a Program menu gives you access to the complete set of information that DESQview has about a program. It consists of two screens:

- The first screen shows the basic information about the program and is either filled in by you during the Add A Program process or from a DVP or PIF.
- The second screen shows advanced program information which you may change to fine-tune a program's setting or to correct any problems the program exhibits running under DESQview.

To page between the two screens:

- **Press F10.**

If a program is listed on the Add a Program menu—or if you have a DESQview Program Information File (DVP) or Program Information File (PIF) for the program—you usually do not need to use the Change a Program command, except perhaps to modify the memory size or specify startup parameters.

If you do not have a DVP or PIF for the program, you must specify the information on the first screen. In general, the default (preassigned) values DESQview uses for advanced entries are correct for most programs and need not be changed.

Also see **Chapter 7**, ***Changing a Program's Information.***

1. Display the DESQview menu and select Open Window. Then select Change a Program and choose the program you wish to change.

To select the program you want to change using the keyboard:

- **Type the two characters to the right of the program name.**

Or, using the mouse:

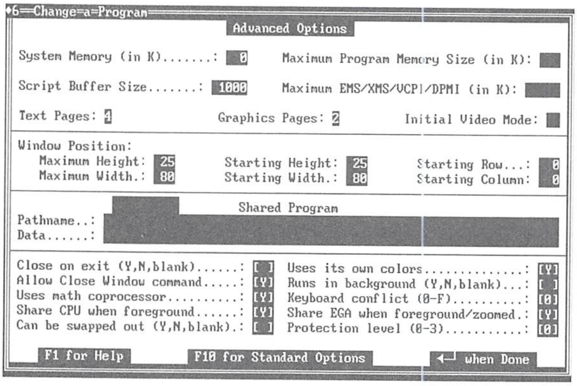
- **Click on the name of the program you want to change.**

Since Change a Program is itself a program, it takes a moment to load. Then, the first page of the Change a Program menu appears.

If you are using a floppy-based system, you must put your everyday DESQview diskette in the drive from which you started DESQview before you select **Change a Program**—see **Appendix D**.

If you want online help for any item, with the cursor in the field you want help for:

- **Press F1.**



```
♦6══Change═a═Program═══════════════════════════════════════════════
                          Advanced Options
 System Memory (in K).......:    0   Maximum Program Memory Size (in K):
 Script Buffer Size.......: 1000     Maximum EMS/XMS/VCPI/DPMI (in K):
 Text Pages: 4            Graphics Pages: 2          Initial Video Mode:
 Window Position:
    Maximum Height: 25      Starting Height: 25      Starting Row...:  0
    Maximum Width.: 80      Starting Width.: 80      Starting Column:  0
                               Shared Program
 Pathname..:
 Data......:
 Close on exit (Y,N,blank)......: [ ]  Uses its own colors.............: [Y]
 Allow Close Window command.....: [Y]  Runs in background (Y,N,blank)...: [ ]
 Uses math coprocessor..........: [Y]  Keyboard conflict (0-F)..........: [0]
 Share CPU when foreground......: [Y]  Share EGA when foreground/zoomed.: [Y]
 Can be swapped out (Y,N,blank).: [ ]  Protection level (0-3)...........: [0]
     F1 for Help        F10 for Standard Options          ◄┘ when Done
```

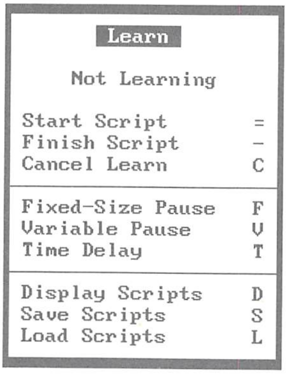
2. Change the incorrect information and then press ↵.

The program's information is changed to reflect the settings you made and Change a Program terminates.

The changes you make to a program's information do not apply if the program is already running when you used the Change a Program command. They take effect the **next time** you start up the program (from the Open Window menu).

When you change a program's information, the old DESQview Program Information File (**DVP**) for the program is saved as a backup file **(BAK)** and then a new DVP file is created containing the changed information.

Learn: DESQview's Keystroke Macro Feature



One of DESQview's most powerful features is Learn, DESQview's keystroke macro feature. Using Learn, you tell DESQview to remember a sequence of your keystrokes and to assign these keystrokes to a particular key on your keyboard. Then, whenever you want, you can play back these keystrokes by pressing the assigned key.

A sequence of remembered keystrokes is called a **script** or a **keystroke macro.** You can create two types of scripts:

- Program scripts are scripts you create while running a program— for example, Lotus 1-2-3. When you press the key you assigned to the script—for example, the Ctrl-X key—the script (keystrokes) are played back to 1-2-3.
- Global scripts are scripts you create on any DESQview menu. You can play back a global script whenever any DESQview menu is displayed. Such a script might, for example, start up several programs or transfer information between programs.
- You can create a script for the current session only or save a script to use each time you run the program.

In order to start and finish scripts, DESQview requires a special key, the **Learn key.** We use **Shift-DESQ**—that is, the keystroke formed by holding down the Shift key and tapping the DESQ key—as the Learn key. This displays the Learn menu, from which you select the Learn action you want.

For a complete description of the Learn command, see **Chapter 5,** ***Learn: DESQview's Keystroke Macro Feature***.

Learning a Script

The basic steps to learn a script are:

- **Get your program to the point where you are ready to type the first keystroke of the script.**
- **Display the Learn menu and select Start Script.**
- **Tell DESQview the key you want to assign to the script.**
- **Enter all the keystrokes for the script. DESQview will remember these keystrokes as you enter them.**
- **Display the Learn menu again and select Finish Script.**

DESQview assigns the keystrokes it remembered to the key you specified.

To learn a global script, start with the DESQview menu displayed .

A script can have pauses and time delays in it. A **pause** tells DESQview that, when it plays back the script, it should stop and let you type in information—such as a file name. A **time delay** tells DESQview to stop playing back the script and wait for some number of seconds before proceeding—usually until the program has finished its current operation.

Playing Back a Script

Once you have learned a script, you can play it back at any time.

If the script was learned for a particular program, you can play it back whenever you are working in that program:

- **Move the cursor to the point in the program where you want to play back the script.**
- **Press the key you assigned to the script.**

If the script is a global script, you can play it back when the DESQview menu is displayed:

- **Display the DESQview menu on which you want to start playing back the script.**
- **Press the key you assigned to the script.**

A good hint when you learn global scripts is to start learning the global script by tapping the DESQ key, then enter keystrokes as if the topmost menu is displayed. You can display other menus, etc. but using this method you can always be sure your keystrokes are sent to the right menu, by forcing the script to start at the top and walk through the menu tree until the right menu is reached. Otherwise, you need to manually display the correct sub-menu to execute the script.

In either case, DESQview then types the keystrokes it previously learned.

To abort a script, after you have started playing it back, press the Ctrl-Break key (see *page 54*).

Notes:

4

DOS Services

DESQview's DOS Services gives you access to all the features of DOS while you are using DESQview.

The most commonly used DOS commands—Copy, Erase, Format Diskette, Rename, Type, and so forth—can be performed using DESQview menus. You do not have to remember the format of the command—just fill in the information indicated in the DESQview menu. For the less-used DOS commands, DESQview does not provide a menu but does permit you to enter the command in the standard DOS format.

Normally, DOS Services starts up with the DESQview directory current. If you wish, you can have DOS Services start up with another directory by specifying the start-up directory in DOS Services' DVP (see **Chapter 7**).

The DESQview Directory command has two major features not available in DOS:

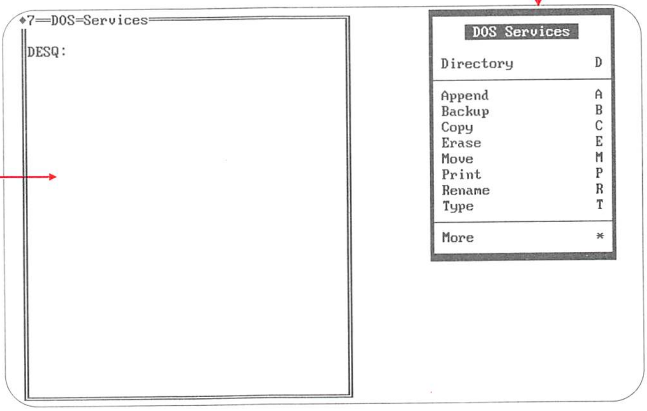
- You can sort the directory to two levels by any of eight sort criteria.
- Once you have a directory of sorted file names on the screen, you can mark (select) one or more of these names and then perform one of the seven main DOS commands on the files you marked.

For example, you could sort your current work directory on the hard disk by Newest Time (meaning that the most recently created document would be listed first), mark all the files you created today, and then select the Copy (or Backup) command to save all these files to diskette.

When you start up DOS Services, the DOS services window appears in the left half of your screen and the DOS Services menu appears in the upper right-hand corner. When you select a DOS command, that command is performed in the DOS Services window.

If, after starting a DOS command, you switch to another window, the command will continue to operate in background while you do other work.

The DOS Services menu has no Quit command. To quit DOS Services, close its window from the DESQview menu.

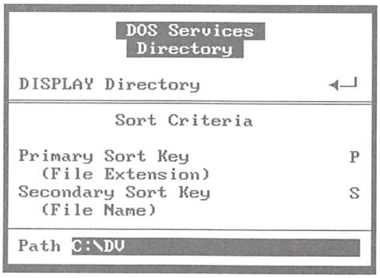


```
DESQ:
```

DOS Services Menu

DOS Services Window

Displaying a Directory and Marking Files



Primary Sort Key (File Extension) P
Secondary Sort Key (File Name) S
Path C:\DV

DOS Services' Directory command lets you manage your files.

With this command you can sort the files in the chosen directory and then, if you wish, mark a file (or group of files) and perform one of the seven main DOS commands on the files you marked.

For example, if you wanted to erase all the files you created more than a month ago, you would display a directory of those files sorted by date, mark the ones created more than 30 days ago, and select the Erase command. (Consider how difficult this task is in DOS.)

The following steps describe how to display a sorted directory, mark some files you want to copy, and then perform the Copy command on these files. The same steps apply to using all seven main DOS Services commands.

1. Display the Directory menu, then type the name of the directory you want to list.

When you open DOS Services, the directory window is empty, except for the prompt, **DESQ**: To display a directory, type **D** or click on Directory in the DOS Services menu. Then:

- **Enter a path name in the Path field.**

The first time you use the Directory command, the Path field is filled in with the path from which you started up DESQview, usually:

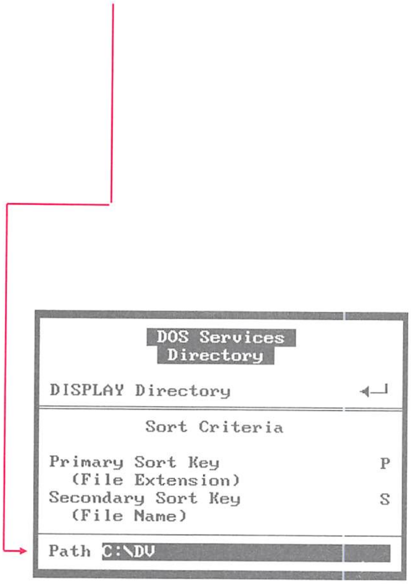
C:\DV

Thereafter, DESQview remembers the last path you specified and fills it in for you.

A path name consists of two parts:

- The drive letter, which specifies the drive to use.
- The path name, which specifies the DOS subdirectory to use.

You may also supply a file name, or group of files to list. (To specify a group of files, use the DOS global characters, ? and *). However, the file specification is not remembered with the drive and directory.



Primary Sort Key (File Extension) P
Secondary Sort Key (File Name) S
Path C:\DV

2. If you want to change the primary sort key, select Primary Sort Key.

- **Using the keyboard, press up arrow and type P.**

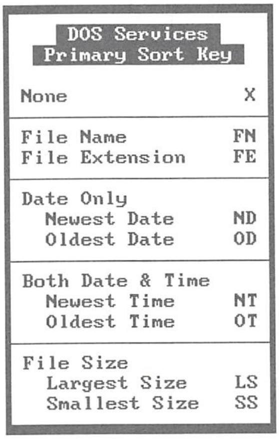
The Primary Sort Key menu appears.

- **Select the primary sort criteria you want.**

The Directory menu reappears with the sort criteria you selected listed (highlighted) under the Primary Sort Key entry.

The list of files you select is sorted to two levels. First, it is sorted by the primary sort key. Then, within each group of files with the same primary sort key, a second sort is performed, using the secondary sort key.

The default primary sort key is initially set to File Extension. Thereafter, DESQview remembers the last sort key you specified and fills it in for you.



3. If you want to change the secondary sort key, select Secondary Sort Key.

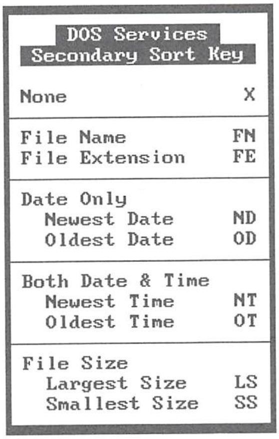
- **Using the keyboard, press up arrow and type S.**

The Secondary Sort Key menu appears.

- **Select the secondary sort criteria you want.**

The Directory menu reappears with the secondary sort criteria you selected.

The default secondary sort key is initially set to File Name. Thereafter, DESQview remembers the last sort key you specified and fills it in for you.



4. Select DISPLAY Directory.

The DOS Services window is cleared. Then, after a moment, the sorted list of files appears and the DOS Services menu reappears with three additional commands; Mark By Name, Only Show Marked and Unmark by Name. See *page 132* for a description of these commands.

The cursor appears in the DOS Services window so you can mark file names. If the entire list is not visible, you can scroll it by moving the cursor below the last line or by using the PgUp or PgDn keys.

The following commands are also available:

- **Home/End** move the cursor to the top/bottom of the window.
- **Ctrl-Home/Ctrl-End** move the cursor to the beginning/end of the list.

You can also move the cursor, mark file names, and scroll, using the mouse. To scroll, click on the PgUp, PgDn, arrows, Home and End option boxes at the top of the DOS Services window.

5. Mark the file names you want.

To mark a file name using the keyboard:

- **Use the up and down arrow keys to move the cursor to the file name you want to mark.**
- **Press the spacebar.**[†]

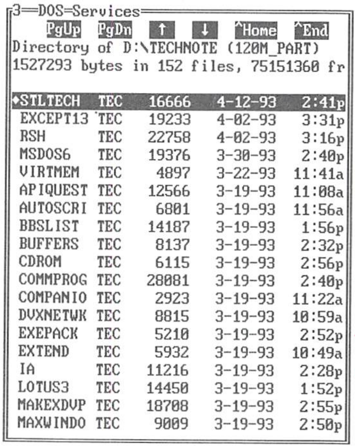
Or, using the mouse:

- **Click on the file name you want to mark.**

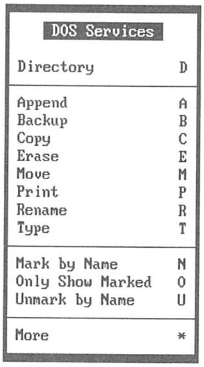
Repeat this process until all the file names you want are marked. (Marked names are preceded by » and highlighted.) To unmark a file, press the spacebar again.

If you mark a directory name—<DIR> —the Directory menu reappears with the directory name you selected filled into the Path field. Complete this menu in the normal manner.

[†] You may optionally use the gray + key (at the far right side of the keyboard) in place of the spacebar to mark and unmark files.



```
Directory of D:\TECHNOTE (120M_PART)
1527293 bytes in 152 files, 75151360 fr

♦STLTECH  TEC   16666  4-12-93   2:41p
 EXCEPT13 TEC   19233  4-02-93   3:31p
 RSH      TEC   22758  4-02-93   3:16p
 MSDOS6   TEC   19376  3-30-93   2:40p
 VIRTMEM  TEC    4897  3-22-93  11:41a
 APIQUEST TEC   12566  3-19-93  11:08a
 AUTOSCRI TEC    6801  3-19-93  11:56a
 BBSLIST  TEC   14187  3-19-93   1:56p
 BUFFERS  TEC    8137  3-19-93   2:32p
 CDROM    TEC    6115  3-19-93   2:56p
 COMMPROG TEC   28081  3-19-93   2:40p
 COMPANIO TEC    2923  3-19-93  11:22a
 DVXNETWK TEC    8815  3-19-93  10:59a
 EXEPACK  TEC    5210  3-19-93   2:52p
 EXTEND   TEC    5932  3-19-93  10:49a
 IA       TEC   11216  3-19-93   2:28p
 LOTUS3   TEC   14450  3-19-93   1:52p
 MAKEXDVP TEC   18708  3-19-93   2:55p
 MAXWINDO TEC    9009  3-19-93   2:50p
```



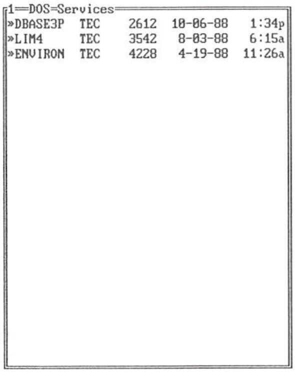
6. Select the command you want to perform on the marked files.

Select one of the eight commands shown on the DOS Services menu: Append, Backup, Copy, Erase, Move, Print, Rename, or Type.

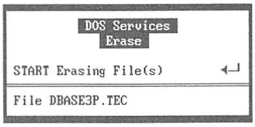
See *page 132* for a description of how to use the Mark by Name, Only Show Marked, and Unmark by Name commands.

The following sequence of actions occurs:

- All unmarked file names are cleared from the DOS Services window.
- The menu for the command you selected appears with the name of the first file filled into its From (or File) field. The name is highlighted to indicate that you cannot change it.



```
»DBASE3P  TEC    2612  10-06-88   1:34p
»LIM4     TEC    3542   8-03-88   6:15a
»ENVIRON  TEC    4228   4-19-88  11:26a
```



File DBASE3P.TEC

7. Supply any additional information needed to complete the command and then select START.

- **If the command has a To field, enter the appropriate file name in this field.**
- **If you want to turn on any of the command options, select those options.**
- **Select START.**

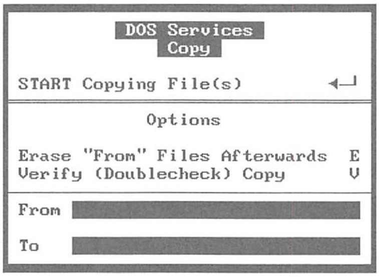
The DOS Services window is cleared and DESQview performs the command you selected on the first marked file. Then it performs the command on each remaining marked file in turn.

The DOS commands that correspond to the actions being performed appear in the DOS Services window as each marked file is processed.

If you mark multiple files, pressing Ctrl-Break aborts further processing after completing the operation in progress—except for Type, which is aborted immediately.

If you switch away from the DOS Services window, the processing of files continues in background.

How to Perform a DOS Services Command



```
DOS Services
    Copy
START Copying File(s)               ↵
            Options
Erase "From" Files Afterwards      E
Verify (Doublecheck) Copy          V
From
To
```

All the DOS Services commands are performed in a similar manner.

The instructions on this page show how to perform the Copy command. Follow these general instructions for all the other DOS Services commands.

If a directory is displayed in the DOS Services window at the time you select a command, and you have marked one or more file names in the directory, the command operates on the names you marked.

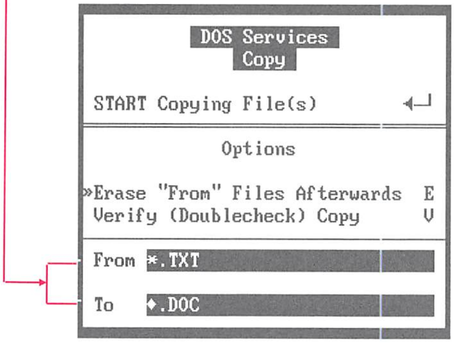
Each marked name is automatically filled into the From (or File) field in turn. You must still complete the other fields as described in step 1.

1. Type the file name or other information requested in the fill-in field (or in each field if there are several).

Most commands require you to enter one or two file names. Some require you to enter a drive or path. Some require both.

When a file name is required, you may usually specify either a single file or a group of files. To specify a group of files, use the DOS global characters (? and *) in the file name according to standard DOS conventions.

If the command has several fill-in fields, press Tab to move between fields.



```
DOS Services
    Copy
START Copying File(s)               ↵
            Options
»Erase "From" Files Afterwards     E
Verify (Doublecheck) Copy          V
From *.TXT
To   *.DOC
```

2. If you want to turn on any of the command options, select those options.

Most commands have one or more options. When the menu first appears, each of the options is turned off.

To select an option using the keyboard:

- **Press the up arrow key, then type the letter corresponding to the option; or, press the up arrow key until the desired option is highlighted, then press the spacebar.**

To select an option using the mouse:

- **Click on the desired option.**

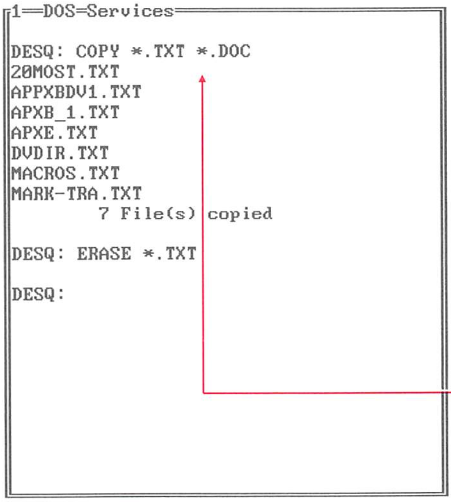
When an option is turned on, it is preceded by » and highlighted.

3. Select START to perform the command.

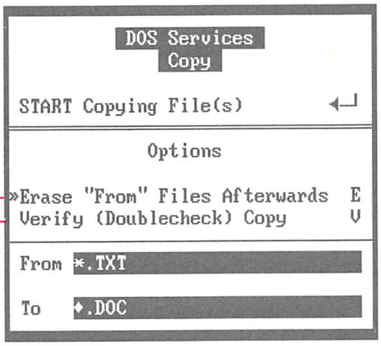
The list of files, if any, in the DOS Services window is removed and the DOS command corresponding to the command you selected shows in the window.

DOS then performs the command in the normal manner. If DOS requires a response from you—as, for example, it does when you format a diskette—DOS's message appears in the DOS Services window. You respond to it in the normal manner.

When the command being performed is completed, the DOS Services menu reappears.



```
1═DOS═Services

DESQ: COPY *.TXT *.DOC
20MOST.TXT
APPXBDV1.TXT
APXB_1.TXT
APXE.TXT
DVDIR.TXT
MACROS.TXT
MARK-TRA.TXT
        7 File(s) copied

DESQ: ERASE *.TXT

DESQ:
```

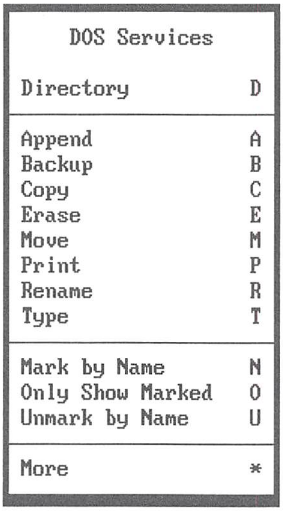


»Erase "From" Files Afterwards E
Verify (Doublecheck) Copy V

From *.TXT

To *.DOC

The DOS Services Menu



The DOS Services menu is the master list of DOS commands supported by DESQview. The most often-used commands are listed on this menu. Less often-used commands are listed on the More menu. You can enter your own DOS commands using the Other command (listed on the More menu). To navigate to the Other command quickly, press * twice.

Three commands shown on the above menu—Mark by Name, Only Show Marked, and Unmark by Name—are used to mark and unmark names in a directory. These commands only appear after you have listed a directory in the DOS Services window by using the Directory command.

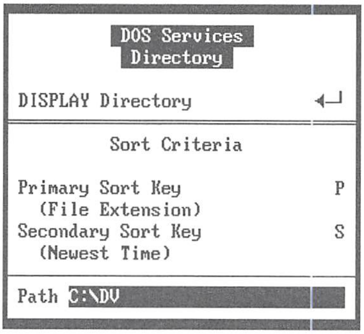
Directory

You use the Directory command to display a list of files in the DOS Services window. You can list all the files in the DOS directory, or only those that match the criteria you specify here.

You can sort the directory at two levels and by any one of eight sort criteria at each level. For example, you could sort by day and then alphabetically within each day.

Once you have used the Directory command to display a directory in the DOS Services window, you can mark one or more files and then perform any of the commands listed on the main DOS Services menu on the files you marked.

See ***pages 116-119*** for more complete information on how to use the Directory command.



Primary Sort Key P
(File Extension)
Secondary Sort Key S
(Newest Time)

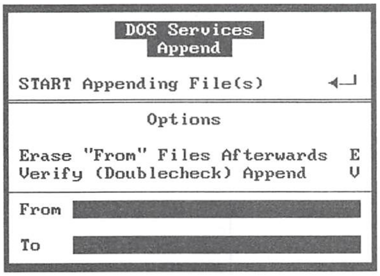
Path C:\DV

Append

You use the Append command to append two or more files together:

- **Type in the From field the name of the files to be appended to the To file.**
- **Press Tab and type in the To field the name of the file to which you want the From files appended.**
- **Select any options you want turned on.**
- **Select START.**

The **To file** cannot contain the DOS global characters (? and *).



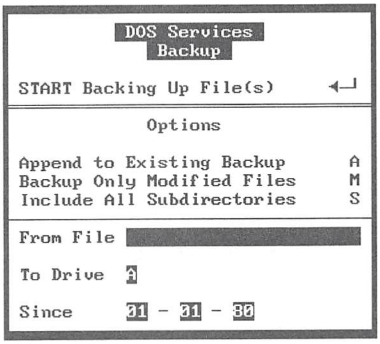
```
           DOS Services
              Append

START Appending File(s)            ←┘
-------------------------------------
              Options

Erase "From" Files Afterwards      E
Verify (Doublecheck) Append        V
-------------------------------------
From

To
```

Backup

You use the Backup command to back up files from your hard disk to floppy diskettes:

- **Type in the From File field the name of the files to be backed up.**
- **If you are not using Drive A, press Tab and type the letter of the drive you are using in the To Drive field.**
- **If you wish to back up only those files created on or after a certain date, press Tab and enter that date in the Since field. (Leave the date 01-01-80 to back up all files.)**
- **Select any options you want turned on.**
- **Select START.**

NOTE: The DOS backup program must be in your DOS path. Also, see ***Appendix E*** *for an important warning.*

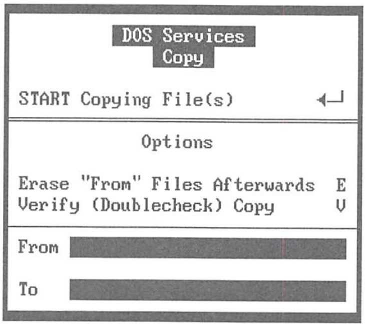


```
            DOS Services
               Backup

START Backing Up File(s)            ←┘
--------------------------------------
              Options

Append to Existing Backup           A
Backup Only Modified Files          M
Include All Subdirectories          S
--------------------------------------
From File

To Drive   A

Since      01 - 01 - 80
```

Copy

You use the Copy command to make a copy of one or more files:

- **Type in the From field the name of the file(s) to be copied.**
- **Press Tab and type in the To field the name you wish to give to the copy of the file(s).**
- **Select any options you want turned on.**
- **Select START.**

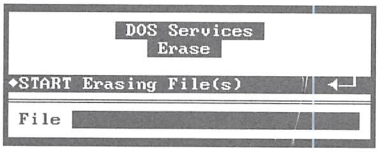


```
            DOS Services
                Copy

START Copying File(s)             ↵

              Options

Erase "From" Files Afterwards   E
Verify (Doublecheck) Copy       V

From
To
```

Erase

You use the Erase command to delete one or more files from a floppy diskette or from your hard disk:

- **Type in the File field the name of the file(s) to be deleted.**
- **Select START.**



```
            DOS Services
               Erase
◆START Erasing File(s)            ↵

File
```

Move

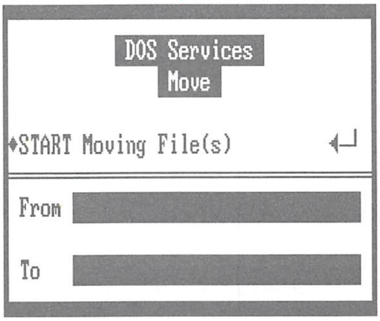
You use the Move command to move one or more files from one directory to another. You may elect to change the file name(s) as well as the path.

You can Move a file or a selection of files from one directory to another on the same or another drive.

After you move a file, it no longer exists in the original subdirectory. If the destination you specify is an existing file, Move replaces that file with the file you are moving.

- **Type in the To field the name of the subdirectory to which you want the file moved. You can use wildcard characters * and ? to give the To file another name, if you wish.**

You can also use this command to rename a directory at the same level.



Print

The Print command works with or without DOS's PRINT.EXE. If PRINT.EXE is loaded before you start DESQview, you can use the Print command to manage the DOS print queue of files being printed in background.

To add a file (or files) to the print queue, or to delete files from the print queue:

- **Type in the File field the name of the file(s) to be added to the queue or deleted from the queue.**
- **Select ADD or REMOVE.**

To display the current contents of the queue:

- **Select DISPLAY.**

To halt printing and discard the queue:

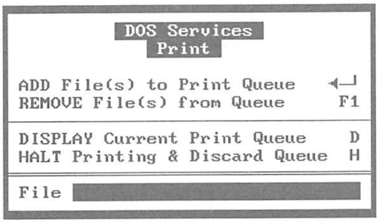
- **Select HALT.**

If PRINT.EXE is not loaded before DESQview, you cannot display or remove files or halt printing. Instead, when you choose Add, and fill in the file names, DESQview issues the following command:

COPY <file> PRN:

where <file> is the name of the file you specified.

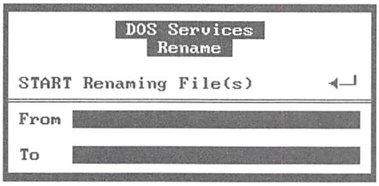
A form feed is sent after each file printed.


DOS Services
Print
ADD File(s) to Print Queue ↵
REMOVE File(s) from Queue F1
DISPLAY Current Print Queue D
HALT Printing & Discard Queue H
File

Rename

You use the Rename command to change the names of one or more files:

- **Type in the From field the name of the file(s) to be renamed.**
- **Press Tab and type in the To field the new name you wish to use for the file(s).**
- **Select START.**



DOS Services
Rename

START Renaming File(s)

From

To

Type

You use the Type command to display the contents of one or more files in the DOS Services window.

- **Type in the File field the name of the file(s) to be typed.**
- **Select START.**

To suspend typing, so you can read the contents of the file:

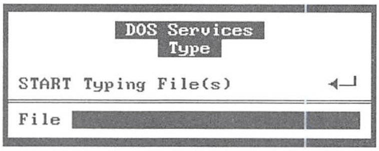
- **Press the Ctrl+NumLock key.**

(You can also use the Pause key, but, remember, this will freeze all windows until you press another key.)

Then, to continue typing, press any key.

To cancel the Type command, when you do not want to see any more of the text:

- **Press the Ctrl+Break key.**



DOS Services
Type

START Typing File(s)

File

Mark by Name
Only Show Marked
Unmark by Name

You can use these commands to mark and unmark file names that you have displayed in the DOS Services window using the Directory command.

You can:

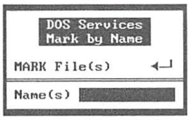
- Mark a group of file names.
- Show only the marked file names and hide the rest.
- Unmark a group of file names.

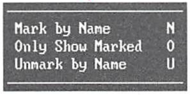
You can also manually change the individual order of the files—after they are displayed in the window. You do this by using the Ins key to move a file name to another position in the directory listing:

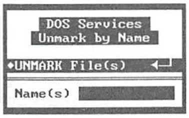
- **Mark a file name using the spacebar or the mouse.**
- **Position the cursor on the line above which you want the name you just marked to be moved.**
- **Press the Ins key.**

See *page 132* for more information on Mark by Name, Only Show Marked and Unmark by Name. You can also mark names using the keyboard or the mouse (see *page 118*).

These three commands only appear on the DOS Services menu after you have displayed a directory in the DOS Services window using the Directory command.







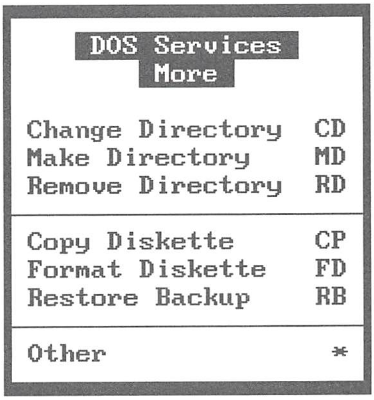
More

You use the More command to display a menu of additional, less-used DOS commands for which DESQview provides built-in support.

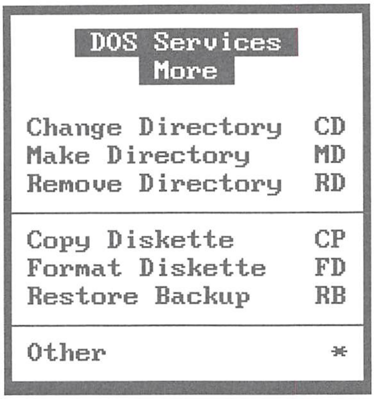
The entries on the More menu are divided into three groups:

- The first group lets you change the default directory for the DOS Services window or create or delete a directory.
- The second group lets you copy or format a diskette or restore files you backed up (using the Backup command).
- The Other command lets you enter your own DOS command.

See the next two pages for additional information.



More DOS Services



In addition to the commands listed on the main DOS Services menu, DESQview supports six other, less-used DOS commands, plus Other.

You use Other to perform the remaining DOS commands. You can also use Other to perform any of the commands built into DOS Services if you wish to use one of these commands in an extended way.

Change Directory

You use the Change Directory command to change the default drive or directory used by commands performed in the DOS Services window.

When the DOS Services window is first opened, the default is set to the path from which you started up DESQview, usually:

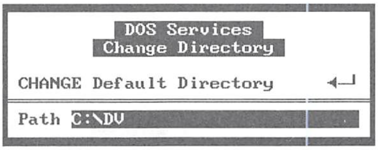
C:\DV

To change the default drive:

- **Type in the Path field the new default drive letter followed by a colon—for example, A:**

Or, to change the default directory:

- **Type in the Path field the new default directory name—for example, \1-2-3.**
- **Select CHANGE.**

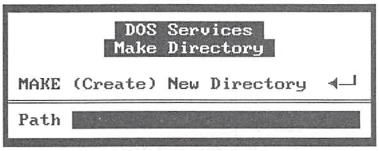


Path C:\DV

Make Directory

You use the Make Directory command to create a new directory entry on the current default drive:

- **Type in the Path field the name of the new directory you want to create—for example, \dBASE.**
- Select **MAKE.**



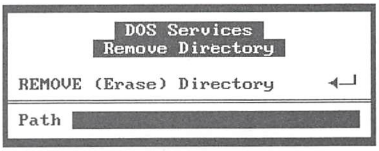
Remove Directory

You use the Remove Directory command to delete an existing empty directory entry from the current drive:

- **Type in the Path field the name of the directory you want to delete—for example, \WordStar.**
- Select **REMOVE.**

This command will give an error and not remove the directory under the following circumstances:

- ☐ If there are any files in the directory being removed.
- ☐ If the directory to be removed is the current default directory.



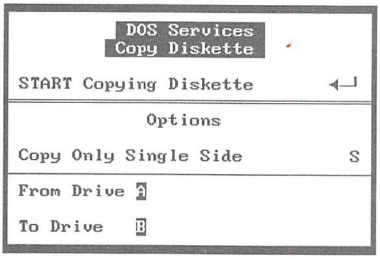
Copy Diskette

You use the Copy Diskette command to make a copy of a diskette (Diskcopy). This will copy the contents of one diskette to another, including directories, if any. This will only work with diskettes of the same size and density.

If you are not copying from drive A to drive B:

- **Type in the From Drive field the letter of the drive containing the diskette to be copied.**
- **Press Tab and type in the To Drive field the letter of the destination drive (they can be the same drive– you will be prompted to swap disks if so).**
- **Select the Copy Only Single Side option if you want it turned on.**
- **Select START.**

Follow the instructions displayed in the DOS Services window.



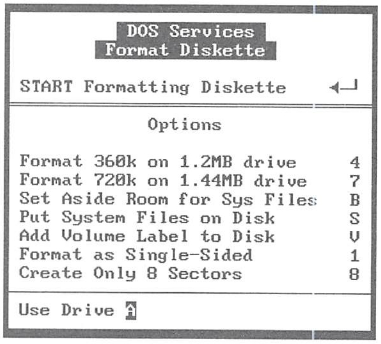
```
           DOS Services
           Copy Diskette

START Copying Diskette           ◄┘

              Options

Copy Only Single Side             S

From Drive A

To Drive   B
```

Format Diskette

You use the Format Diskette command to format a new diskette before you use it on your system:

- **If you are not using drive A, type the letter of the drive you are using in the Use Drive field.**
- **Select any options you want turned on. (See your DOS Manual for a more complete explanation of these options.)**
- **Select START.**

Follow the instructions displayed in the DOS Services window.



```
             DOS Services
            Format Diskette

START Formatting Diskette          ◄┘

                Options

Format 360k on 1.2MB drive          4
Format 720k on 1.44MB drive         7
Set Aside Room for Sys Files        B
Put System Files on Disk            S
Add Volume Label to Disk            V
Format as Single-Sided              1
Create Only 8 Sectors               8

Use Drive A
```

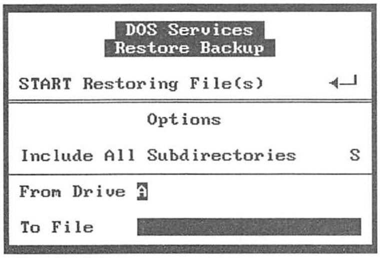
Restore Backup

You use the Restore Backup command to restore files saved using the Backup command:

- **If you are not using drive A, type the letter of the drive you are using in the From Drive field.**
- **Press Tab and type in the To File field the name of the files to be restored.**
- **Select the option Include All Subdirectories if you want it turned on.**
- **Select START.**

Follow the instructions displayed in the DOS Services window.

*NOTE: The DOS Restore program must be in your DOS path. Also, see **Appendix E** for an important warning.*



DOS Services
Restore Backup

START Restoring File(s) ↵

Options

Include All Subdirectories S

From Drive A

To File

Other

You use the Other command to perform those DOS commands not built into DOS Services.

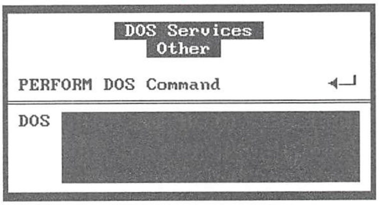
You can also use Other to perform any legal DOS command, you wish. For example, to copy a binary file, you would use the Copy command with the /B option.

- **Type in the DOS field the DOS command to be performed (up to 112 characters long).**
- **Select PERFORM.**

The command you enter is performed in the DOS Services window.

After you first use the OTHER command, the DOS field will remember the last DOS command you performed and fill it in for you.

There are no restrictions on what you may enter in the DOS field. However, any program you invoke must fit in the memory space allotted to DOS Services, after subtracting the space for the DOS Services program itself.

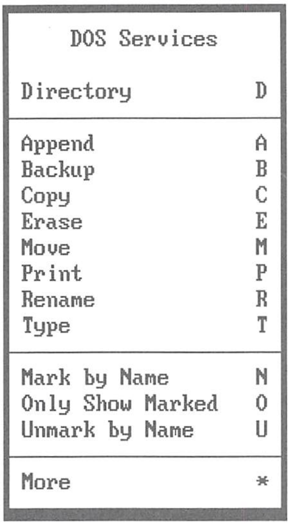


DOS Services
Other

PERFORM DOS Command ↵

DOS

Marking and Unmarking File Names



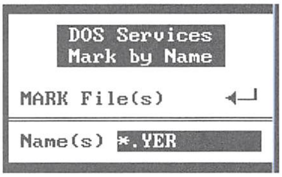
In addition to marking and unmarking file names by using the up arrow key, the down arrow key and the spacebar (see *page 118*), you can use the Mark by Name, Only Show Marked, and Unmark by Name commands.

Mark by Name

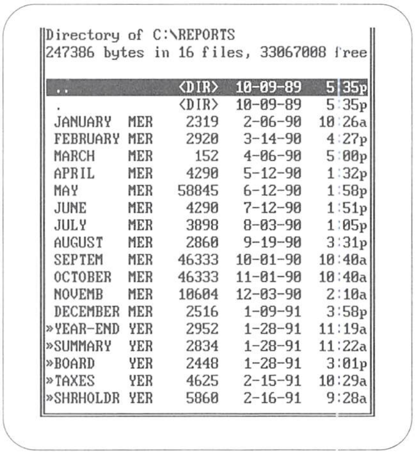
You use the Mark by Name command to mark a file or group of files explicitly by name:

- **Type in the Name(s) field the file name(s) to be marked.**

To specify a group of names, use the DOS global characters (? and *) in the file name according to standard DOS conventions. (Enter *.* to mark all files.)



Name(s) *.YER



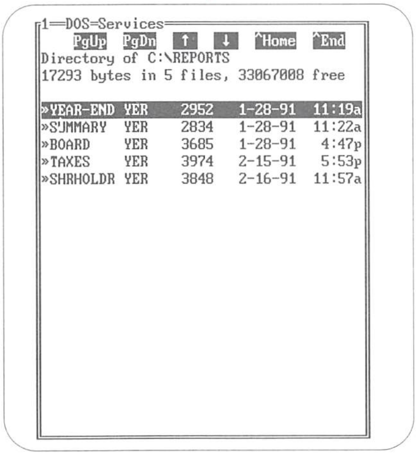
```
Directory of C:\REPORTS
247386 bytes in 16 files, 33067008 free

 ..                <DIR>  10-09-89   5:35p
 .                 <DIR>  10-09-89   5:35p
 JANUARY  MER       2319   2-06-90  10:26a
 FEBRUARY MER       2920   3-14-90   4:27p
 MARCH    MER        152   4-06-90   5:00p
 APRIL    MER       4290   5-12-90   1:32p
 MAY      MER      58845   6-12-90   1:58p
 JUNE     MER       4290   7-12-90   1:51p
 JULY     MER       3898   8-03-90   1:05p
 AUGUST   MER       2860   9-19-90   3:31p
 SEPTEM   MER      46333  10-01-90  10:40a
 OCTOBER  MER      46333  11-01-90  10:40a
 NOVEMB   MER      10604  12-03-90   2:10a
 DECEMBER MER       2516   1-09-91   3:58p
»YEAR-END YER       2952   1-28-91  11:19a
»SUMMARY  YER       2834   1-28-91  11:22a
»BOARD    YER       2448   1-28-91   3:01p
»TAXES    YER       4625   2-15-91  10:29a
»SHRHOLDR YER       5860   2-16-91   9:28a
```

Only Show Marked

You use the Only Show Marked command to hide all unmarked files from the list of files, leaving in the DOS Services window a list consisting of only the marked files. The hidden files are still on your disk, they are just removed from view.

To show all files again:

- **Select the Directory command.**
- **Select Display Directory.**



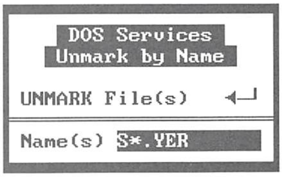
```
Directory of C:\REPORTS
17293 bytes in 5 files, 33067008 free

»YEAR-END YER   2952  1-28-91  11:19a
»SUMMARY  YER   2834  1-28-91  11:22a
»BOARD    YER   3685  1-28-91   4:47p
»TAXES    YER   3974  2-15-91   5:53p
»SHRHOLDR YER   3848  2-16-91  11:57a
```

Unmark by Name

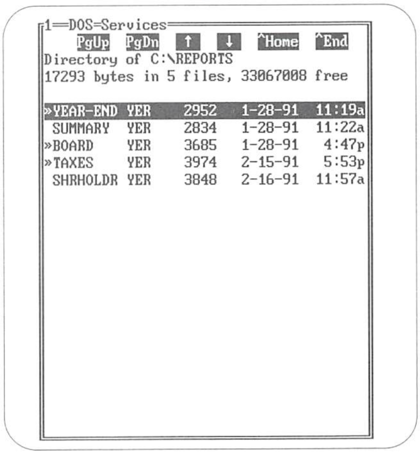
You use the Unmark by Name command to unmark a file or group of files explicitly by name:

- **Type in the Name(s) field the file name(s) to be unmarked.**

To specify a group of names, use the DOS global characters (? and *) in the file name according to standard DOS conventions.



Name(s) S*.YER



```
Directory of C:\REPORTS
17293 bytes in 5 files, 33067008 free

»YEAR-END YER   2952  1-28-91  11:19a
 SUMMARY  YER   2834  1-28-91  11:22a
»BOARD    YER   3685  1-28-91   4:47p
»TAXES    YER   3974  2-15-91   5:53p
 SHRHOLDR YER   3848  2-16-91  11:57a
```

Notes:

5

Learn: DESQview's Keystroke Macro Feature

One of DESQview's most powerful features is Learn. You use Learn to tell DESQview to remember a sequence of your keystrokes and to assign these keystrokes to a particular key on your keyboard. Then, whenever you want, you can play back these keystrokes by pressing the assigned key.

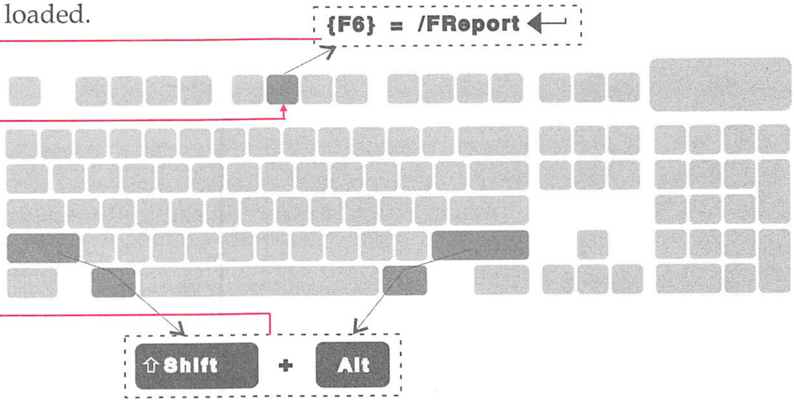
A sequence of remembered keystrokes is called a **script** or a **keystroke macro.** The key to which you have assigned a script is called the **mapped key**. It is mapped because, when you press it, DESQview maps (translates) the key into the script.

Once you have assigned a script to a key, the key's previous use (if any) is replaced by the script, as long as you are in the same context as you were when the script was created. By "in the same context" we mean:

- If you created the script while running a program, the script will be associated with that program. For example, if you created a script while in Lotus 1-2-3—and assigned it to the Ctrl+X key, then whenever you run 1-2-3 in DESQview, pressing Ctrl+X will play back the script.
- If you created the script while a DESQview menu was displayed and assigned it, for example, to the F6 key, then whenever a DESQview menu is displayed and you press the F6 key, the script is played back.
- If you created the script as a Startup Script, the script will play back when DESQview is started up or when a particular program is started up—depending on how you created the Startup Script (see ***page 147***).

In order to start and finish scripts, DESQview requires a special key, which we call the **Learn key.** By default, this is the **Shift+Alt**—that is, the keystroke formed by holding down the Shift key and tapping the Alt key—as the Learn key. This displays the Learn menu, from which you select the Learn action you want. You may redefine this key using DESQview Setup, if you wish.

Scripts are loaded automatically by DESQview (unless DESQview is started with the /NOSETUP switch—see **Appendix E**). When you start up DESQview, the scripts you created on DESQview menus are loaded. When you start up a program, scripts you created for the program are loaded.



A **script** is a sequence of keystrokes remembered by DESQview.

The **mapped key** is the key to which you have assigned a script. When you press this key, the script is played back.

The **Learn key** displays the Learn menu so you can start or finish a learn.

Learning a Script

The basic steps to learn a script are:

- Get your program to the point where you are ready to type the first keystroke of the script. Or, if you want to create a script that works when a DESQview menu is displayed, display the DESQview menu you want.
- Display the Learn menu and select **Start Script**. Then tell DESQview which key you want to use. Also, if you like, you can give the script a descriptive name, like **Load Report**. This name will appear on the menu of scripts displayed when **Display Scripts** is selected from the Learn menu.
- Enter all the keystrokes for the script. DESQview will remember these keystrokes as you enter them.
- Display the Learn menu again and select **Finish Script.**

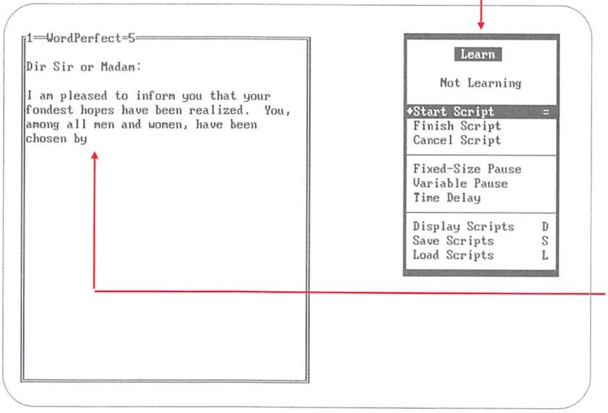
The script is now operational. To play it back, just press the key(s) to which it is mapped or you may select it from the **Display Scripts** menu.

Starting a Learn

The first step in creating a script is to tell DESQview you want to start a Learn operation. After you have reached the point where you are ready to enter the first keystroke of the script:

- **Hold down the Shift key and tap the Alt key to display the Learn menu.**

We call Shift-Alt the **Learn key.** There is no mouse equivalent. You must start a Learn from the keyboard.


1=WordPerfect=5

Dir Sir or Madam:

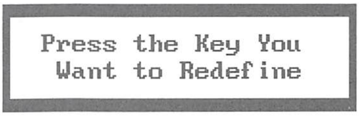
I am pleased to inform you that your fondest hopes have been realized. You, among all men and women, have been chosen by

The **Learn Menu** is the master list of Learn commands.

With the cursor at the point where you want to start the script, display the Learn menu.

- **Select Start Script. You can do this using either the keyboard or the mouse.**

The following message appears:



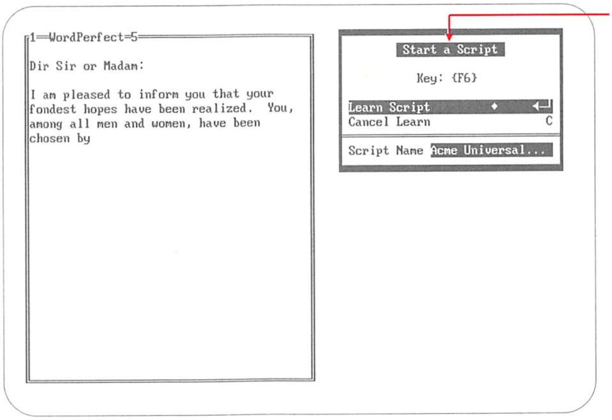
Press the Key You
Want to Redefine

- **Press the key you want to use—for example, the F6 key.**

The Start a Script menu appears.

DESQview recognizes two types of keys. **Typewriter** keys correspond to the text that appears on the screen when you type—namely, the letters, numbers, and common symbols. **Special** keys correspond to actions—such as ↵, Backspace, F6, Alt-M, Ctrl-X, and so forth. They do not have a standard text (or screen) representation.

In the actual script file, DESQview represents special keys as the key name in curly brackets—for example, {**Enter**}, {**BackSpace**}, {**F6**}, {**Alt-M**}, {**Ctrl- X**}, and so forth. See **Appendix I** for a list of the keys DESQview uses and for information on which keys can and cannot be redefined.



1=WordPerfect=5

Dir Sir or Madam:

I am pleased to inform you that your fondest hopes have been realized. You, among all men and women, have been chosen by

Start a Script

Key: {F6}

Learn Script ◆ ↵
Cancel Learn C

Script Name Acme Universal...

The Start a Script menu appears after you select the key to which you want to assign the script.

You may optionally give the script a name. We recommend you do so to help remind you what the script does. You can display a menu of the scripts you have created by selecting the **Display Scripts** command from the **Learn** menu (see *page 147*). If you have previously defined a script for that key, its name will appear in the name field.

- **If you want your script to have a name, type that name.**

If the name you enter starts with an exclamation point (!), the script becomes a startup script. See *page 147.*

- **Select LEARN Script.**

The Start a Script menu disappears. Everything you type, until you press the Learn key again, is recorded as part of the script.

To cancel the Learn: Instead of selecting **LEARN Script,** type **C.**

Entering the Script

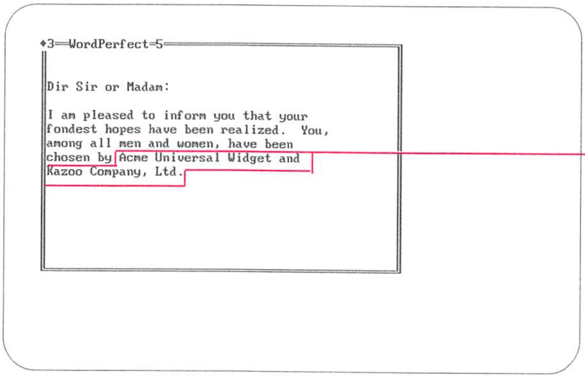
- **Perform whatever action you want to be recorded as the script.**

All the keystrokes you type are remembered by DESQview, up to the limit of the Learn Scripts buffer. DESQview clicks after each keystroke to remind you that it is learning. (Clicks may be hard to hear on a noisy keyboard.)

A script is saved in the **Learn Scripts** buffer while you are learning it. When you finish the Learn operation, it is transferred to the **Program Scripts** buffer. There is a Program Scripts buffer for each program and one for scripts you create on DESQview menus. You can control the size of these buffers (larger buffers use more memory). See **Appendix A** for more information.

Nesting Scripts

Scripts can be nested—that is, while you are learning a script, you can enter the mapped key of another, previously defined, script. The only limit is the length of the Learn Scripts and Program Scripts buffers which must be large enough to contain both.



```
♦3══WordPerfect═5══════════════════════════

Dir Sir or Madam:

I am pleased to inform you that your
fondest hopes have been realized.  You,
among all men and women, have been
chosen by Acme Universal Widget and
Kazoo Company, Ltd.
```

Type in the script.

Finishing the Script

When you have finished the last keystroke of the action you want to record, finish the Learn:

- **Press the Learn key (Shift-Alt) to redisplay the Learn menu.**
- **Select Finish Script.**

The script is completed and assigned to the key you selected—for example, the F6 key.

Remember, you must always finish (or cancel) a script once you start it. If you do not, when the Learn Scripts buffer is full, a loud beep will sound each time you press a key—until you redisplay the Learn menu and either finish or cancel the script.

To cancel the Learn: Instead of selecting **Finish Script**, select **Cancel Learn.** If you have already finished the script, the only way to cancel it is to delete it—see ***page 147.***

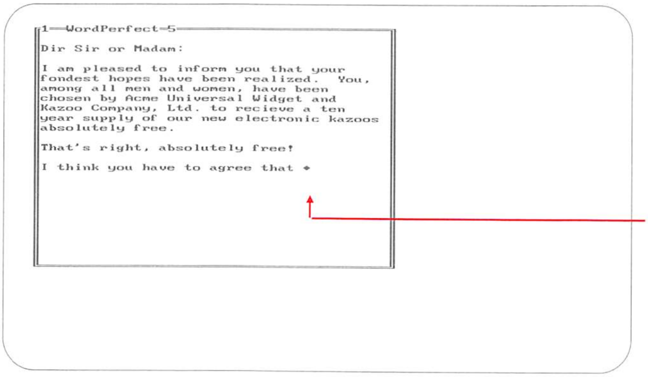
The Script is saved in the **script buffer**.

F6= Acme Universal Widget And Kazoo Company, Ltd.

Playing Back a Script

Once you have learned a script, you can play it back at any time. If the script was learned for a particular program, you can play it back whenever you are working in that program. If the script was learned on a DESQview menu, you can play it back when any DESQview menu is displayed.

- **For a program script, move the cursor to the point in the program where you want to play back the script. For a DESQview script, display the DESQview menu on which you want to start playing back the script.**



```
1═WordPerfect═5
Dir Sir or Madam:

I am pleased to inform you that your
fondest hopes have been realized.  You,
among all men and women, have been
chosen by Acme Universal Widget and
Kazoo Company, Ltd. to recieve a ten
year supply of our new electronic kazoos
absolutely free.

That's right, absolutely free!

I think you have to agree that ◆
```

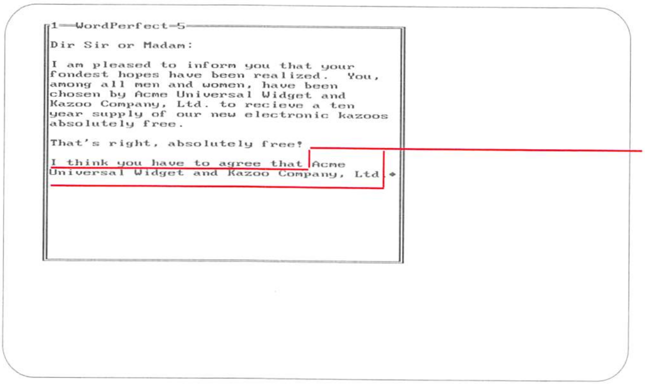
Get to the point where you want to play back the script.

- **Press the key you assigned to the script—for example, the F6 key.**

DESQview types the keystrokes it previously remembered.

When a script is played back, it is loaded into the **Playback Scripts** buffer for that program—the entire script must fit. If the script plays back another script, that script is also loaded into the Playback Scripts buffer (in its entirety) at the time it is referenced. The initial length of this buffer is 1,024 bytes. You can change its length using the Setup program (see **Appendix A**).

You can stop the playback of a script by pressing the Ctrl-Break key. You can perform the mapped key's original function, rather than play back the script assigned to the key, by typing ‘ immediately before the mapped key. You may reassign which key DESQview uses for the Quoting character from the Setup program, if you wish.



```
1═WordPerfect═5
Dir Sir or Madam:

I am pleased to inform you that your
fondest hopes have been realized.  You,
among all men and women, have been
chosen by Acme Universal Widget and
Kazoo Company, Ltd. to recieve a ten
year supply of our new electronic kazoos
absolutely free.

That's right, absolutely free!

I think you have to agree that Acme
Universal Widget and Kazoo Company, Ltd ◆
```

Press the key you assigned to the script.

Pausing During a Script

Often you need to create a script that will temporarily stop during playback to allow you to enter variable information—for example, a file name—or to wait for some action to complete, such as a spreadsheet recalculation.

DESQview allows you to stop playback by entering a pause in a script. A pause tells DESQview that,while playing back the script, it should stop and either let you type in variable information or wait for a fixed length of time. There are four kinds of pauses:

- ☐ **A fixed-size pause** allows you to type a fixed number of characters such as a phone number or other information of fixed length.
- ☐ **A variable pause** allows you to type any number of characters. (You signal you are done by pressing ↵.)
- ☐ **An embedded learn** works like a variable pause except that you may embed or nest it within the script you are currently learning and it will be saved and mapped to another specified key. This enables your scripts to request variable information from the user, which can then be played back within the execution of the outer script. The embedded learn additionally becomes a new script which can also be played back independently. This is useful, for example, to capture keystrokes, such as a file name, which you need to reuse several times.
- ☐ **A time delay** halts playback for a given number of seconds. This is useful for programs that ignore what you type while certain operations are in progress—for example, saving a file to disk. The script resumes after the timed pause.

Defining a Fixed-Size Pause

A fixed-size pause tells DESQview that when the script is played back, you want to pause playback, type a fixed number of characters, and have the script resume automatically. This would be useful, for instance, to ask the user for an eight character file name to which the script would add the extension. To define a fixed-size pause:

- **Start your script. Then enter keystrokes until you reach the point where you want to start the pause.**
- **Press the Learn key (Shift-Alt) to display the Learn menu.**
- **Select Fixed-Size Pause.**

  The menu disappears and you are back where you were.

- **Type the text you want in the pause.**

  DESQview will count the number of characters you type. When you have entered all the pause text:

- **Display the Learn menu and select Fixed-Size Pause again.**

  DESQview finishes the pause and resumes learning the script.

Playing Back a Fixed-Size Pause

When you play back a script with a fixed-size pause in it, DESQview stops at the point where you defined the pause:

- **Type the correct number of characters.**

After you type the last character of the pause, the script resumes playing back.

Defining a Variable Pause

A variable pause tells DESQview that when the script is played back, you want to temporarily stop playback, type a variable number of characters, and then resume the script when you signal, by pressing the Enter key, that you have entered all the variable information. This would be useful, for instance, to ask the user to supply a file name of any length and then automatically add the extension. To define a variable pause:

- **Start your script. Then enter keystrokes until you reach the point where you want to start the pause.**
- **Press the Learn key (Shift-Alt) to display the Learn menu.**
- **Select Variable Pause.**
- **Type the text you want in the pause.**
- **Display the Learn menu and select Variable Pause again.**

This terminates the Variable Pause and DESQview resumes learning the script.

To use the Enter key in a variable pause, you must precede it with the Quoting character (‘). Otherwise, Enter will terminate the variable pause.

Playing Back a Variable Pause

When you play back a variable pause, DESQview stops at the point where you defined the pause:

- **Type whatever variable information you want, of any length.**

Since DESQview has no way of automatically determining when you are finished typing the variable information, you must indicate when you are done:

- **Press ↵ when you have entered all the text you want.**

The script resumes playing back.

The ↵ you press to complete a variable pause only tells Learn to resume playing back the rest of the script. It does not become part of the script and is never seen by the program in which the script is being played back.

Defining a Script with an Embedded Learn

An embedded learn in a script tells DESQview that, when the script is played back, you want to temporarily stop playback, type a variable number of keystrokes, and then resume the script when you signal that you have entered all the variable information—and, in addition, that you want the variable information you typed to be assigned to a key so that it can be used again. The mapped key for the embedded learn may be used again within the script being currently learned as well as independently.

The steps for creating an embedded learn within a script are basically the same as for learning a script:

- **Start your outer script. Then enter keystrokes until you reach the point where you want to start the embedded learn in the script.**
- **Press the Learn key (Shift-Alt) to display the Learn menu.**
- **Select Start Script again.**
- **Press the key you want to use—for example, the F3 key.**
- **If you want your embedded script to have a name, supply a name.**

  This will be useful if you want to use the spawned script outside the script in which it was embedded.
- **Select LEARN Script.**
- **Type whatever variable information you want, of any length.**
- **Press the Learn key (Shift-Alt) to display the Learn menu again.**
- **Select Finish Script to complete the embedded learn.**

  DESQview completes learning the embedded script and assigns the keystrokes it remembered to the key you selected—in this example, the F3 key. Then, DESQview resumes learning the original script. Type more keystrokes, as necessary, to your operation.
- **Select Finish Script again to complete the outer script.**

  Now, whenever you press the F3 key, the information you just entered will be played back—until you replay the original script again. When you do that, the script assigned to the F3 key is redefined to the new variable information you enter. For an example of the implications of using the embedded script as part of the outer script, see the following page.

See **Chapter 6**, ***Advanced Mark and Transfer, pages 164-166*** for an example of a script that uses embedded learn (to two levels) to mark a 200-line table and then transfer it into 1-2-3 in a single step.

Playing Back an Embedded Learn

When you play back a script with an embedded learn in it, DESQview pauses at the point where you defined the embedded learn:

- **Type whatever variable information you want, of any length.**
- **Press ↵ when you have entered all the text you want.**

  If you need to use the Enter key within the pause, you may do so, but you must precede it with the quoting key (‘).

The variable information you just typed replaces the information that was previously assigned to the key you selected—for example, the F3 key—and DESQview then resumes playing back the original script. Now, whenever you press the F3 key, the new information you just entered will be played back. The script previously assigned to the F3 key is discarded.

For example, to create a script on the F7 key that copies a group of document files (xxx*.DOC) to a floppy, deletes any related backup files (xxx.BAK), then lists the files on floppy as verification, you could use an embedded learn. Start the original learn, F7. At the point where you are ready to enter the file name for the first time, start an embedded learn , F3, then type the file name and end the embedded learn. You will then continue with the original Learn, F7, and when you need the file name again, press the F3 key. Do not forget to end the original learn. Symbolically, your script would be represented as:

```
{F7}=COPY {F3}=<filename>.DOC A:{Enter}
                    DEL {F3}.BAK {Enter}
                    DIR A:{F3}.DOC {Enter}
```

If you want to be sure you do not accidentally press the F3 key later, you could assign the script created by the embedded learn to a more obscure key—for example, Ctrl–^.

Every time you ran the F7 script, it would pause, allow you to enter the filename, and remember (play back) the contents of F3 within the execution of the outer script, F7.

Creating a Time Delay

A time delay tells DESQview that, when the script is played back, you want to temporarily stop playback, wait a fixed number of seconds, and then have the script resume automatically. To define a timed delay:

- **Start your script. Then enter keystrokes until you reach the point where you want a time delay.**
- **Press the Learn key (Shift-Alt) to display the Learn menu.**
- **Select the Time Delay to display the Time Delay menu.**
- **Type the number of seconds you want the script to wait and then select LEARN Time Delay.**

When you play back the script, it will halt at the point where you entered the time delay, for the number of seconds you indicated, and then automatically resume playing back.

You can end the time delay early by pressing ↵.

Loading and Saving Scripts

When you create scripts, they are stored in your computer's memory. The areas set aside for scripts are called **script buffers.** There is a script buffer for each program running and one for the scripts you create on DESQview menus.

When you close a program the script buffer for that program is discarded and all scripts are lost—unless you saved the scripts first. (You will be reminded.) When you quit DESQview, all script buffers are discarded and all unsaved scripts are lost.

You save the scripts you have created with the Save Scripts command on the Learn menu. You must save the scripts for each program and for DESQview menus separately.

While a script is being learned, it is stored in the **Learn Scripts** buffer. When the script is complete, it is transferred to the **Program Scripts** buffer or to the **DESQview Scripts** buffer. Initially, the Learn Scripts buffer and each Program Scripts buffers is 1,024 bytes long. The script buffer size is cumulative— it is the maximum limit for **all** scripts you create for a program or for **all** scripts you create on all DESQview menus.

You can change the Program Scripts buffer size using the Change a Program command (see **Chapter 7**). You can change the Learn Scripts buffer size and the DESQview Scripts buffer size by running the Setup program (see **Appendix A**).

Loading Scripts

When you start up DESQview, the scripts you created on DESQview menus are automatically loaded (if any). Then, each time you start up a program, the scripts for that program are automatically loaded (if any).† You can also tell DESQview to explicitly load the DESQview scripts or the scripts for a program. This is useful, for example, after you have modified a script with the Convert a Script program (see **Appendix I**) or if you have several different sets of scripts for the same program. To explicitly load scripts:

- **For application-specific scripts, make the program you want to load the scripts for the current window, if you are not already working in it. To load the DESQview scripts, display the DESQview menu.**
- **Display the Learn menu and select Load Scripts.**

The Load Scripts menu appears with the standard script file name filled into the File field. For DESQview scripts, the standard file name is **DESQVIEW.DVS.** For a program, the standard file name is **xx-SCRIP.DVS,** where xx are the keys used to select the program from the Open Window menu. (This guarantees that the file name is unique.) Script files are assumed to be stored on the drive and directory from which you started up DESQview (most commonly, C:\DV) unless you explicitly specify a drive and directory.

---

† Only the scripts in a script file conforming to the naming convention described here are loaded automatically.

For information on managing scripts on a floppy-based system, see **Appendix D**.

- **Change the file name, as may be required.**
- **Select LOAD Scripts.**

The script file you specified is loaded, replacing the DESQview or programs scripts that are currently loaded (if any). Any changes you made to these scripts are lost unless you previously saved them using the Save Scripts command.

Saving Scripts

The scripts you create are stored in your computer's memory. They are not saved to disk automatically until you explicitly tell DESQview to do so. (However, you are reminded to do so when you close down a program or quit DESQview.) To save scripts:

- **Resume working in the program you want to save scripts for, if you are not already working in it. Or, to save the DESQview scripts, display any DESQview menu.**
- **Display the Learn menu and select Save Scripts.**

The Save Scripts menu appears with the standard script file name filled into the File field—or, if you loaded these scripts with the Load Scripts command, the File field contains the file name you used. For DESQview scripts, the standard file name is **DESQVIEW.DVS.** For a program, the standard file name is **xx-SCRIP.DVS**, where **xx** are the keys used to select the program from the Open Window menu.

- **Change the file name, as you require.**

However, we recommend that you do not change the file name unless you are creating multiple sets of scripts for a program or for DESQview, because only the script files named **DESQVIEW.DVS** and **xx- SCRIP.DVS** will be automatically loaded when DESQview or the program is started up. If you give the script file any other name, it can only be loaded manually, with the Load Scripts command.

- **Select SAVE Scripts.**

The scripts you specified are saved to disk under the name you specified—on the drive and directory from which you started up DESQview (most commonly, **C:\DV**) unless you explicitly specify a drive and directory to use.

Saving Scripts Containing an Embedded Learn

When a script containing an embedded learn is saved for the first time, the contents and key assignment of the embedded learn are saved with it. If you always wish to save the contents of the embedded learn, you must thereafter explicitly save the scripts for that program. DESQview will not interpret a change in the embedded variable keystrokes as a new script. This is only noteworthy if you intend to retain the contents of the embedded script and you wish to use it for the next session.

Other Learn Features

Learn has several additional features:

- You can delete a script you no longer want.
- You can display a menu listing of all the scripts you have created for DESQview and for each program and optionally choose and execute a script from this menu.
- You can define a startup script for DESQview and for each program.
- You can use the ‘ (Quoting) key to override a key redefinition and the Ctrl-Break key to abort the playback of a script.
- You can edit or debug a script using the Convert a Script program to convert a script file into a text (ASCII) file. You can then edit the script in any text editor or word processor that reads and writes a plain ASCII file. Convert a Script also reads a text file and converts it into a script file when you are done editing.
- You can use DESQview Notepad Companion[†], if you have it, to edit script files. Conversion of script files is automatic when using Notepad in Document mode.

Deleting a Script

You delete a script by re-learning an empty script for the key you mapped.

- **Display the Learn menu and select Start Script.**
- **Press the key for the script you want to delete.**
- **Select LEARN Script.**

Now, immediately end the Learn:

- **Display the Learn menu again and select Finish Script.**

The key you used for the script is now restored to its normal usage.

Getting a List of Scripts

To see a list of all scripts you have created:

- **Display the Learn menu and select Display Scripts.**

A menu listing the scripts you have created appears. Both the key and the name you gave to the script in the Script Name field (if any) are shown.

- **Select the script you want—or press Esc to remove the menu.**

Defining a Startup Script

You can specify a script to be a **startup script.** A startup script is executed automatically when you start up a program or start up DESQview, as well as when you press the key you assigned to the script.

To create a startup script, learn a script in the normal manner. But, when the Start a Script menu appears, enter a name that begins with an exclamation point (!) in the Script Name field— for example, **!Startup**

[†] Available separately from Quarterdeck Office Systems

DESQview. Now, this script will automatically be performed when the program or DESQview is started up.

To be sure you startup script plays back properly:

- When you learn a **program startup script**, be sure to learn it immediately after starting up the program.
- When you learn a **DESQview startup script,** be sure to learn it with no windows open and with the DESQview menu displayed.

DESQview also recognizes an alternate method of defining the DESQview startup script—assigning a DESQview script to the exclamation point (!) key. Only DESQview scripts function as startup scripts when assigned to the ! key. This does not apply to program scripts.

Special Learn Keys

DESQview recognizes three special keys for learn:

- The **Learn key (Shift-Alt)** displays the Learn menu—which is your starting point for all Learn operations, except playback. See ***page 46*** for more information.
- The **‘ (Quoting key)** overrides a key redefinition. Normally, when you press a key you have redefined—for example, the F6 key--the key performs the script you learned for that key. However, if you press the ‘ key immediately before the F6 key, the original action of the F6 key is performed instead. See *page 53* for more information. You may redefine the Learn key, Quoting key, and other DESQview system keys as well, in the DESQview Setup program (see **Appendix A**).
- The **Ctrl-Break key** stops (aborts) the playback of a script. When you press Ctrl-Break while a script is being played back, the script is aborted. (If you press Ctrl-Break at any other time, it is acted upon by the program.) See *page 54* for more information.

The Convert a Script Program

The scripts you create are written to disk in a special, encoded format. Sometimes it is useful to be able to edit them, or to create your own scripts directly with a word processor. The Convert a Script program lets you do this.

When you run the Convert a Script program, you can read a script file written by the Save Scripts command, or convert a script you prepared with your word processor (as an ASCII text file) into the format of a script file.

To run Convert a Script, first use Add a Program to install it on the Open Window Menu. Convert a Script is in your DESQview directory (CONVSCR.COM).

Getting Started

Appendix I, ***Editing DESQview Scripts***, discusses the Convert a Script program in detail and lists all the keys you can use (or cannot use) in creating scripts. Basically, the easiest way to learn how to use Convert a Script is:

- ☐ Create a few scripts for a program you are familiar with—such as Lotus 1-2-3.
- ☐ Save these scripts to a file using the Save Scripts command. Note the name of the file that appears when you display the Save Scripts menu—for example, **L2-SCRIPT.DVS**. A DESQview startup script is named **DESQVIEW.DVS.**
- ☐ Edit the scripts:

  If you have the DESQview Notepad Companion[†], you can edit script files directly. Just edit the file **\DV\L2-SCRIP.DVS** in document mode (see **Appendix I** for more information).

  If you do not have the DESQview Notepad Companion, run Convert a Script to convert the scripts you saved to a text (ASCII) file, edit them with your word processor[††], then run Convert a Script again to convert them back to script file format.
- ☐ Load the edited scripts back into DESQview using the Load Scripts command.

Repeat this process until the scripts work the way you want.

Directly Creating a Script

You can also create a script directly with the DESQview Notepad Companion or with your favorite word processor. Enter a list of key definitions (see **Appendix I**). If you are not using Notepad, save these definitions to a file[††] and run Convert a Script to convert this file to script file format.

[†] Available separately from Quarterdeck Office Systems

[††] When you save the file be sure to save it as raw ASCII text, without any formatting or embedded control characters.

Notes:

6

Advanced Mark and Transfer

DESQview's basic mark and transfer feature lets you mark a block of information and transfer it to another program, or to another point in the same program. See **Chapter 3**, ***Using DESQview, pages 89-92,*** for a discussion of the basic mark and transfer process. When you mark multiple lines of information, you can specify a number of powerful advanced operations that affect mark and transfer:

- You can mark and transfer disjoint blocks of information, that is, mark contiguous information as separate pieces, or "lines." (See ***The Concept of Marked Lines***, on the next page.) You can do this so the lines may be handled specially when transferred, for instance, to reformat them.
- You can mark non-contiguous information from different snapshots (from the same or several different DESQview windows) which may be gathered together, as disjoint information, into the transfer buffer. Once combined, the disjoint information can be transferred to another program in a single step.
- You can mark and transfer repeating patterns of information—for example, records in a database or rows and columns in a spreadsheet.
- You can use DESQview's Learn feature with mark and transfer to create scripts (keystroke macros) that transfer information from one program to another, processing the information as you transfer.
- You can use the Scissors command to transfer information between programs written expressly for DESQview—if both the source and destination programs support the Scissors capability.

This chapter explains how to use these advanced features by walking you through two examples:

- The first example describes how you would mark and transfer disjoint blocks of information by transferring information from a database (**dBASE III Plus**) to a word processor (**WordPerfect**) in "mailing label" format.
- The second example describes how you would mark and transfer rows and columns of information by transferring information downloaded from a mainframe with a communications program to a spreadsheet program (**Lotus 1-2-3**).

This chapter is for advanced users. You should familiarize yourself with the basic mark and transfer process on ***pages 89-92*** and **Chapter 5**, ***Learn: DESQview's Keystroke Macro Feature,*** before reading this chapter.

The Concept of Marked "Lines"

The key to marking disjoint information is using the **Mark End** and **Mark More** commands to create entities within the transfer buffer, which we call **lines**. When you use the Mark More command, DESQview appends what you mark into the mark buffer instead of overwriting it as is done when you use the **Mark Begin** command.

If you have marked a block containing more than one line, DESQview Transfer, as might be expected, will see each end-of-row in the block as a separate line. However, each mark you terminate with the **Mark End** command is also seen as a separate line, as well as the last item marked which might be terminated by selecting **DONE.** The concept of a marked line means that you can tell Transfer to handle each line differently, by specifying keystrokes to type both before and after each marked line is transferred. The keystrokes can consist of navigation keys (arrow keys, Home, End, Page Up and Page Down), carriage returns, any character on the keyboard or a combination of any of these keys. You may even delimit transferred keystrokes with control characters, if your application requires it. The only restriction is that you may not use the DESQ key by itself.

When you select **Type keys to begin each line** from the DESQview Transfer menu, you may specify keystrokes to insert before the line you are about to transfer. By selecting other transfer options from this menu, you can specify keystrokes to be appended to the line or lines you are about to transfer. This means that, by selective marking using these advanced techniques, you can insert formatting instructions in text, place numbers in specified spreadsheet cells or perform operations in the destination program in between transferring disjoint sections of a marked block—even automate the whole process with a DESQview script.

In the examples below, where we mark database fields and spreadsheet cells as discrete lines, DESQview discriminates between marked lines and remembers a pattern of intervening keystrokes. You specify a pattern of intervening keystrokes, such as a right arrow after every spreadsheet cell—except at the end of a row, where you want to navigate to the beginning of the next spreadsheet row. Once that pattern is set up, you can tell DESQview to transfer the rest of the information—and the rest of the marked text will be transferred to the destination program according to the pattern you established.

In addition, DESQview Transfer will handle numbers exceptionally, if you tell it to. Transfer knows that programs which expect numeric data will generate an error if any non-numeric data is embedded in the numeric string, so it recognizes and strips everything but periods and minus signs from numbers and translates left parentheses to minus signs. By selecting **Transfer the first number** or **Transfer the next number**, you tell DESQview to edit (filter) any non-numeric characters from the string of numbers.

Combined with keystroke macros and embedded learns, advanced mark and transfer can add data-sharing power and automated formatting of transferred data to your DESQview applications.

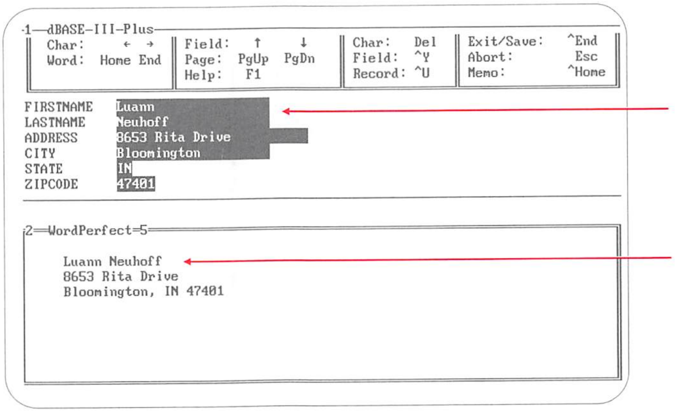
Transferring Disjoint Blocks of Information

The basic mark and transfer process (that you learned about in **Chapters 2** and **3**) described the steps to mark and transfer a single block of information:

- Mark the block of information, using **Mark Begin** and **DONE.**
- Switch to the program where you want to transfer the information, put the cursor at the transfer point, and select **Transfer**.
- Press ↵ to transfer the block of information you marked into the program in the same format—namely, as multiple lines of text.

In addition, DESQview gives you the following advanced capabilities:

- You can mark more than one block of information to be transferred within a single screen snapshot.
- You can mark blocks in different snapshots and combine them into a single transfer operation.
- You can mark a set of disjoint blocks and then repeat the same sequence of steps to mark additional blocks with the same pattern. For example, after you have marked columns 2, 4, and 6 in row 4 of a spreadsheet, you could tell DESQview—with a keystroke macro—to repeat this marking pattern on rows 5 through 15.



```
FIRSTNAME    Luann
LASTNAME     Neuhoff
ADDRESS      8653 Rita Drive
CITY         Bloomington
STATE        IN
ZIPCODE      47401
```

```
Luann Neuhoff
8653 Rita Drive
Bloomington, IN 47401
```

Mark disjoint blocks of information

Transfer them to a different format

- You can type a specific key sequence at the beginning of each line you transfer—in addition to the key sequence you type at the end of each line.
- You can specify a different keystroke before/keystroke after sequence between marked blocks, rather than using the same sequence for each block.

- You can transfer the same marked information more than once. For example, after marking fields in a database, you could transfer the information to a spreadsheet program and then to a word processing program. Information stays in the transfer buffer until you exit mark mode, then start another mark operation.

Disjoint Blocks: Defining the Problem

The best way to understand DESQview's advanced capabilities is to walk through an example. The example we will use is building a set of mailing address labels from a database of names and addresses. We will use a sample database called **NAMES** and we will construct the mailing labels in **WordPerfect.**

The **NAMES** database consists of 11 records, as follows:

FIRSTNAME	LASTNAME	ADDRESS	CITY	STATE	ZIPCODE
Luann	Neuhoff	8653 Rita Drive	Bloomington	IN	47401
Claire	Buckman	8307 Santa Anita Blvd	Oxnard	CA	93034
Hank	Bicksby	4101 Peonia Rd	Flagstaff	AZ	86001
Lena	Garnett	520 S. 8th St.	Reno	NV	89504
Lisa	Kafmanan	1960 Lindley Avenue	Reseda	CA	91355
Jay	Johnson	14234 Riverside Dr.	Riverside	CA	92504
Sara	Collins	303 W. Milford St.	Portland	OR	97215
Rick	Zambini	108 Prairie	Woodland Hills	CA	91364
Kim	Arlich	10564 Ventura Blvd.	Long Beach	CA	90806
John	Montovan	1034 Lorraine St.	Culver City	CA	90230
Vicky	Gorman	203 E. 3rd St. S.	Mesa	AZ	85201

The format of a mailing address label is:

Luann Neuhoff
8653 Rita Drive
Bloomington, IN 47401

Disjoint Blocks: Defining the Steps

For this example, we will assume that you have started **dBASE III Plus** running in window 1 and issued the command **USE NAMES**. Also we will assume that you have started **WordPerfect** running in window 2 and that it is ready to receive information.

Overall, the way we want the database-to-mailing-label procedure to work is this:

- First, use the **EDIT n** command in **dBASE III Plus** to display the first record you want to transfer.
- Second, tell DESQview to mark the record and transfer it into the format of a mailing label in the **WordPerfect** window.
- Third, switch back to the **dBASE III Plus** window so you can display the next record to transfer.

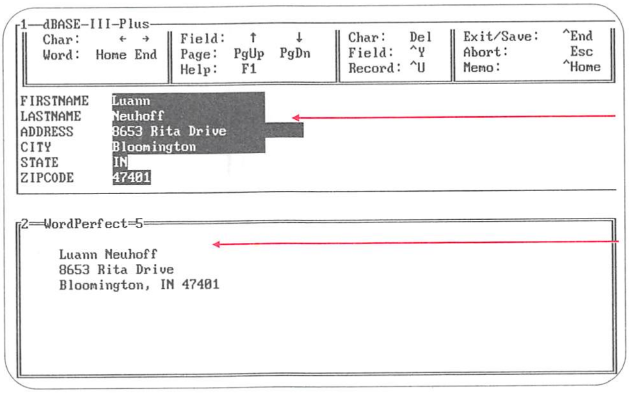
To perform this procedure, we will use DESQview's advanced mark and transfer features in combination with DESQview's Learn command. The basic steps are:

- Starting with **dBASE III Plus** as the current window, use the **EDIT n** command to display the first record you want to transfer.
- Perform DESQview's Start Script command to start learning a script.
- Use DESQview's Mark command to mark the 6 fields in the database in the order you want them to appear in the address label: **FIRSTNAME, LASTNAME, ADDRESS, CITY, STATE, ZIPCODE.**
- Switch to **WordPerfect** and use DESQview's Transfer command to transfer the 6 fields into **WordPerfect** in the format of an address label.
- Switch back to **dBASE III Plus.**
- End the Learn.

Now, you have a script that performs the desired transfer and reformatting of information. To transfer another record:

- Use the PgUp and PgDn keys—or whichever **dBASE III Plus** commands you prefer—to display the next record you want to transfer.
- Perform the script.

Repeat these two steps until all the records you want are transferred.



```
FIRSTNAME    Luann
LASTNAME     Neuhoff
ADDRESS      8653 Rita Drive
CITY         Bloomington
STATE        IN
ZIPCODE      47401
```

```
     Luann Neuhoff
     8653 Rita Drive
     Bloomington, IN 47401
```

Window 1: The dBASE III Plus database file with record 1 displayed and ready to transfer.

Window 2: The WordPerfect window open and ready to receive information.

Disjoint Blocks: Marking the Blocks

To begin, open a **dBASE III Plus** window and display record 1 of the **NAMES** database. Then open a **WordPerfect** window and switch back to **dBASE III Plus**.

- **Open dBASE III Plus as window 1. Then enter the USE NAMES command, followed by the EDIT 1 command.**
- **Open WordPerfect as window 2. Then switch back to window 1.**

Now, start learning a script which will be assigned to the Alt-A key:

- **Display the Learn menu (Shift-Alt) and select Start Script. Then press the Alt-A key, type Address Label for the script name, and press ↵.**

Now, mark the 6 fields:

- **Display the Mark menu.**
- **Move the cursor to the FIRSTNAME field and mark it—but end the Mark by selecting Mark End rather than DONE. Be sure that you mark all 10 characters of the field, not just the name "Luann."**

When you select **Mark End,** the Mark menu remains on the screen and **mark mode** remains in effect so you can mark more blocks. You need to mark the entire field, not just **Luann,** because you are going to repeat this marking step on other **FIRSTNAME** fields, some of which are longer than **Luann.**

- **Mark the remaining 5 fields in the order: LASTNAME, ADDRESS, CITY, STATE, ZIPCODE—again, remember to be sure to end each Mark by using Mark End rather than DONE and to mark the entire field.**

Now that all 6 fields are marked and remembered by DESQview, you are ready to transfer this information into **WordPerfect.**

Disjoint Blocks: Transferring the Blocks

To transfer the information to **WordPerfect:**

- **Switch to window 2 and display the Transfer menu.**
- Select **Transfer the first line.**

Now you must indicate the key (or keys) you want typed between the first field (FIRSTNAME) and the second field (LASTNAME):

- **Type a space. Then tap the DESQ key to indicate that you have entered all the keystrokes (in this case, just one, the spacebar character) you want between the two fields.**

A space appears after **Luann** and the Transfer menu reappears. Notice that DESQview has deleted the **trailing blanks**—that is, the blanks at the end of the field.

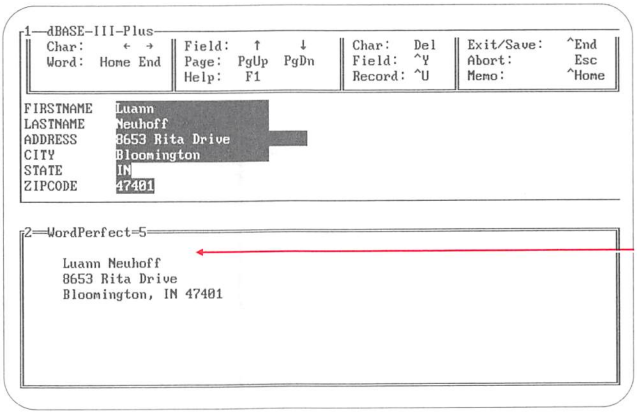
Next transfer the 5 remaining fields in the following sequence, with the following intervening keystrokes:

- **Select Transfer the next line, type the appropriate key or keys (as shown below), and tap the DESQ key.**

after	**LASTNAME**	type	↵
after	**ADDRESS**	type	↵
after	**CITY**	type	a comma and one space
after	**STATE**	type	two spaces
after	**ZIPCODE**	type	two ↵

Finally, switch back to **dBASE III Plus** and end the Learn:

- **Switch to window 1, display the Learn menu (Shift-Alt), and select Finish Script.**



```
1—dBASE-III-Plus
  Char:    ←   →   Field:  ↑     ↓    Char:    Del   Exit/Save:  ^End
  Word:  Home End  Page:  PgUp  PgDn  Field:   ^Y    Abort:       Esc
                   Help:   F1         Record:  ^U    Memo:      ^Home
FIRSTNAME    Luann
LASTNAME     Neuhoff
ADDRESS      8653 Rita Drive
CITY         Bloomington
STATE        IN
ZIPCODE      47401

2=WordPerfect=5

     Luann Neuhoff
     8653 Rita Drive
     Bloomington, IN 47401
```

The six dBASE III Plus fields are transferred to WordPerfect reformatted as a mailing label.

Disjoint Blocks: Transferring More records using a script

To transfer additional records:

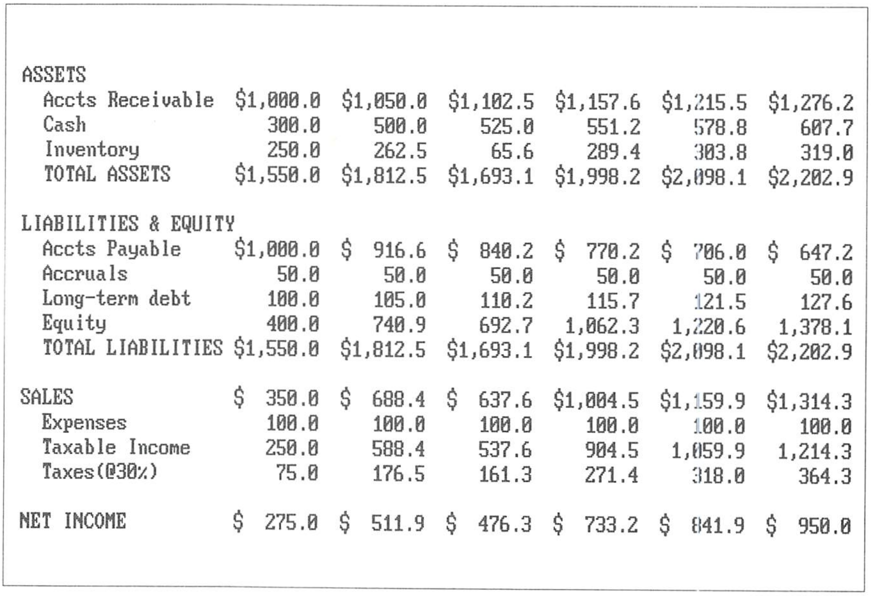
- **Use the PgDn or PgUp key to display the next record you want to transfer.**
- **Press Alt-A.**
- **Repeat these steps until all the records you want are transferred.**

Transferring Rows and Columns

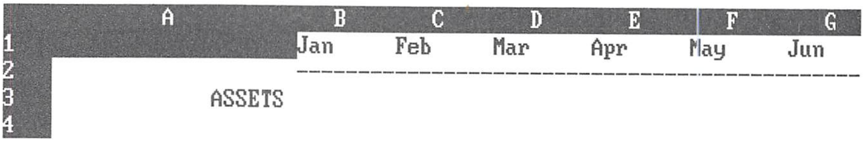
The discussion on the preceding several pages, *Transferring Disjoint Blocks of Information,* examines the case of marking and transferring disjoint blocks of information. Another frequent use of mark and transfer is to transfer rows and columns of information into a spreadsheet program.

Rows and Columns: Defining the Problem

The best way to understand how to transfer rows and columns is to walk through an example. The example we will use is having a communications program download and capture some financial information from your mainframe and then transfer it into **Lotus 1-2-3.** Since we do not have a mainframe handy, let us assume that your mainframe produces a table in the format shown below—namely, the information in **Sample Spreadsheet.**



```
ASSETS
  Accts Receivable  $1,000.0 $1,050.0 $1,102.5 $1,157.6 $1,215.5 $1,276.2
  Cash                 300.0    500.0    525.0    551.2    578.8    607.7
  Inventory            250.0    262.5     65.6    289.4    303.8    319.0
  TOTAL ASSETS      $1,550.0 $1,812.5 $1,693.1 $1,998.2 $2,098.1 $2,202.9

LIABILITIES & EQUITY
  Accts Payable     $1,000.0 $  916.6 $  840.2 $  770.2 $  706.0 $  647.2
  Accruals              50.0     50.0     50.0     50.0     50.0     50.0
  Long-term debt       100.0    105.0    110.2    115.7    121.5    127.6
  Equity               400.0    740.9    692.7  1,062.3  1,220.6  1,378.1
  TOTAL LIABILITIES $1,550.0 $1,812.5 $1,693.1 $1,998.2 $2,098.1 $2,202.9

SALES               $  350.0 $  688.4 $  637.6 $1,004.5 $1,159.9 $1,314.3
  Expenses             100.0    100.0    100.0    100.0    100.0    100.0
  Taxable Income       250.0    588.4    537.6    904.5  1,059.9  1,214.3
  Taxes(@30%)           75.0    176.5    161.3    271.4    318.0    364.3

NET INCOME          $  275.0 $  511.9 $  476.3 $  733.2 $  841.9 $  950.0
```



```
            A               B        C        D        E        F        G
1                         Jan      Feb      Mar      Apr      May      Jun
2                         ----------------------------------------------------
3              ASSETS
4
```

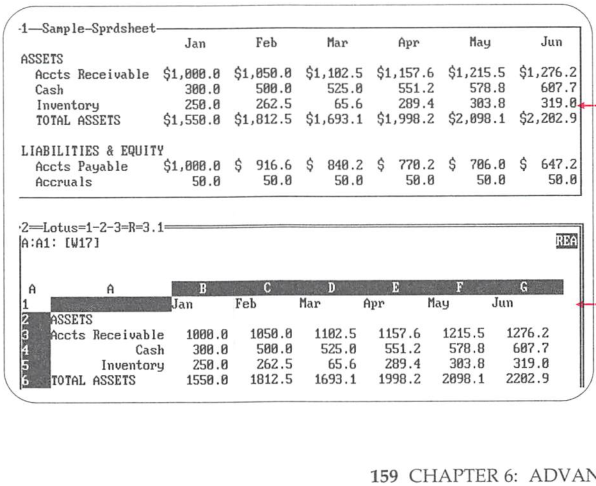
Let us also assume that **1-2-3** is set up in the format show below:

For this example, we will assume that you have started **Sample Spreadsheet** running in window 1 and **Lotus 1-2-3** in window 2. Lotus has to be in text mode; DESQview cannot mark text in graphics (WYSIWYG) mode. Overall, the way we want the table-to-spreadsheet procedure to work is this:

- First mark the top-most line of information in the table (skipping the months and the **ASSETS** line), recording the keystrokes you enter as a script.
- Second, use this script to mark the remaining lines in the table.
- Third, switch to **1-2-3,** enter the header information in columns A-G of lines 1-3, and then transfer the table all at once into **1-2-3.**

To perform this procedure, we will use DESQview's advanced mark and transfer features in combination with DESQview's Learn command. The basic steps are:

- Starting with **Sample Spreadsheet** as the current window, display the Mark menu.
- Skipping the months row, position the cursor at the beginning of the **Accts Receivable** row—1 row under the **A** in **ASSETS**. Then start a Learn.
- First, mark the label itself—**Accts Receivable.** Then mark each of the 6 columns of numbers in turn.
- Position the cursor at the beginning of the **Cash** line. (Be sure to use the arrow keys, not ↵, to move the cursor to the beginning of the next line. Remember, pressing ↵ ends the Mark command.)
- End the Learn.
- Use the script you just created to mark the remaining 17 lines (including the 3 blank lines).
- Switch to **Lotus 1-2-3 ,** type in the header information in columns A-G of rows 1-2, and then position the spreadsheet cursor at **A3**.
- Tell DESQview to transfer the first marked line—**Accts Receivable**—as text (using the **Transfer the first line** command). Then type a right arrow.



```
·1—Sample-Sprdsheet
                         Jan         Feb         Mar         Apr         May         Jun
ASSETS
  Accts Receivable  $1,000.0    $1,050.0    $1,102.5    $1,157.6    $1,215.5    $1,276.2
  Cash                 300.0       500.0       525.0       551.2       578.8       607.7
  Inventory            250.0       262.5        65.6       289.4       303.8       319.0
  TOTAL ASSETS      $1,550.0    $1,812.5    $1,693.1    $1,998.2    $2,098.1    $2,202.9

LIABILITIES & EQUITY
  Accts Payable     $1,000.0    $  916.6    $  840.2    $  770.2    $  706.0    $  647.2
  Accruals              50.0        50.0        50.0        50.0        50.0        50.0

·2═Lotus═1-2-3═R═3.1
A:A1: [W17]                                                                          REA

A          A               B         C         D         E         F         G
1                   Jan       Feb       Mar       Apr       May       Jun
2 ASSETS
3 Accts Receivable    1000.0    1050.0    1102.5    1157.6    1215.5    1276.2
4             Cash     300.0     500.0     525.0     551.2     578.8     607.7
5        Inventory     250.0     262.5      65.6     289.4     303.8     319.0
6 TOTAL ASSETS        1550.0    1812.5    1693.1    1998.2    2098.1    2202.9
```

Mark rows and columns of information.

Transfer them to a spreadsheet program.

- ☐ Next, tell DESQview to transfer the next 6 blocks as numbers. Separate all but the last block by a right arrow. After the last block, put 6 left arrows and a down arrow to move the cursor to **A4**, the beginning of the next row.
- ☐ Use **Transfer the rest of your data** to transfer the remaining 17 rows.

Rows and Columns: Defining the Blocks

To begin, open a **Sample Spreadsheet** window:

- **Open Sample Spreadsheet as window 1.**
- **Display the Mark menu.**
- **Position the cursor at the beginning of the Accts Receivable row—under the A of ASSETS.**

Now, start learning a script which will be assigned to the Alt-M key:

- **Display the Learn menu (Shift-Alt) and select Start Script. Then press the Alt-M key, type Mark Line for the script name, and press ↵.**

Next, mark the label field:

- **Mark the Accts Receivable entry—but end the Mark by selecting Mark End rather than DONE. Be sure to mark all 20 characters, through the column just before the dollar sign ($).**

When you select **Mark End**, the Mark menu remains on the screen and **mark mode** remains in effect so you can mark more blocks. You need to mark the entire label field, not just **Accts Receivable**, because you are going to repeat this marking step on other entries, some of which are longer than **Accts Receivable**.

- **Mark the number $1,000.0, starting in the dollar sign and extending through the .0 of $1,000.0—8 characters.**
- **Mark the remaining 5 numbers (Feb-Jun) in the same way, as 8-column wide entries.**
- **Position the cursor at the beginning of the Cash line. Use the arrow keys to move the cursor, not the ↵ key.**

Now all 7 fields are marked and remembered by DESQview and the cursor is positioned at the beginning of the next field. So, end the Learn:

- **Display the Learn menu (Shift-Alt) and select Finish Script.**

Now, mark the remaining 17 rows of **Sample Spreadsheet** and end marking:

- **Press Alt-M 17 times to mark the remaining 17 rows.**
- **Select DONE to end marking.**

Rows and Columns: Transferring the blocks

To transfer the information, open a **1-2-3** window. Then, set up columns A-G, type the appropriate information in rows 1-2, and prepare to start the transfer:

- Open Lotus 1-2-3 as window 2.
- Type the six months in columns B-G of row 1 by typing **Jan** ↵, and so forth. And, type the word **ASSETS** in cell A2.
- Position the spreadsheet cursor at A3. Then, set column A to 20 wide by typing **/Worksheet Column Set-Width 20** ↵ and indicate you want numbers set to 1 decimal place by typing **/ Worksheet Global Format Fixed 1** ↵.
- Display the Transfer menu.

Now you must indicate that you want to insert text **before** the first field—in this case, a quotation mark to guarantee that the label is transferred to **1-2-3** as text, even if it starts with a number:

- Select **Type keys to begin each line.**
- Type a double quote mark (").
- Tap the **DESQ** key to indicate that you have entered all the text you want to insert before the transferred field.

The double quote mark (") appears on the **1-2-3** data entry line. Now, transfer the text label field:

- Select **Transfer the next line.**

DESQview will ask which characters to insert between lines.

- Press the right arrow to indicate you want to move the cursor one cell to the right after the label is transferred. (This transfers Accts Receivable and moves the cursor to B3.)
- Tap the **DESQ** key to complete the keystroke insertion command for the first transfer.

This redisplays the Transfer menu. Next, Transfer the 6 numeric fields:

- Select **Transfer the next number.**

This tells DESQview that the next block is a number and it should not transfer the dollar signs or commas from the text file (**Sample Spreadsheet** is really a text file), even though they were included in the mark operation. DESQview will filter these characters before the number is placed in the spreadsheet cell. When DESQview transfers a number with this command, any nonnumeric characters except periods and minus signs are removed and a leading left parenthesis is converted to a minus sign.

You will see 1000.0 on the **1-2-3** data entry line:

- **Press right arrow to place the number in the cell. This transfers $1,000.0 as a number—namely as 1000.0— into cell B3.**
- **Tap the DESQ key to complete the keystroke insertion.**
- **Repeat the last two steps four more times to transfer the information for Feb-May.**

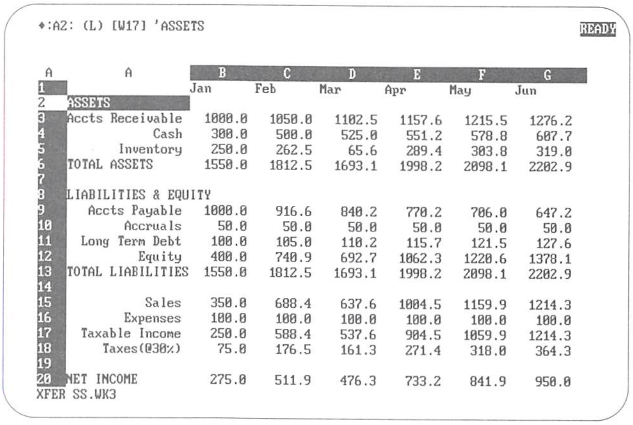
For the June column, you will want to move the cursor to the beginning of the next row after the transfer, to start the next row (**Cash**.) You will tell DESQview to do this by entering all the keystrokes needed to navigate to cell A4 after the June column has been transferred:

- **To transfer the Jun value, select Transfer the next number.**
- **Press the down arrow once, press the left arrow six times. (This places the number 1276.2 into cell G3, and moves the cursor to A4.)**
- **Tap the DESQ key to complete the keystroke insertion sequence.**

Note that you specified seven keystrokes to be executed when transferring the cells in the last column. Finally, to transfer all the remaining 17 lines you marked:

- Select **Transfer the rest of your data.**

The transfer program has memorized the pattern of keystrokes before and keystrokes after each transferred insertion relative to the sequence you have just performed. Each **first-in-the-row** cell will be inserted as a text label, followed by six numeric insertions and keystrokes to navigate to the beginning of the next spreadsheet row. The result is the following 1-2-3 spreadsheet:



```
♦:A2: (L) [W17] 'ASSETS                                           READY

 A         A           B         C         D         E         F         G
 1                    Jan       Feb       Mar       Apr       May       Jun
 2 ASSETS
 3 Accts Receivable  1000.0    1050.0    1102.5    1157.6    1215.5    1276.2
 4             Cash   300.0     500.0     525.0     551.2     578.8     607.7
 5        Inventory   250.0     262.5      65.6     289.4     303.8     319.0
 6 TOTAL ASSETS      1550.0    1812.5    1693.1    1998.2    2098.1    2202.9
 7
 8 LIABILITIES & EQUITY
 9    Accts Payable  1000.0     916.6     840.2     770.2     706.0     647.2
10         Accruals    50.0      50.0      50.0      50.0      50.0      50.0
11   Long Term Debt   100.0     105.0     110.2     115.7     121.5     127.6
12           Equity   400.0     740.9     692.7    1062.3    1220.6    1378.1
13 TOTAL LIABILITIES 1550.0    1812.5    1693.1    1998.2    2098.1    2202.9
14
15            Sales   350.0     688.4     637.6    1004.5    1159.9    1214.3
16         Expenses   100.0     100.0     100.0     100.0     100.0     100.0
17   Taxable Income   250.0     588.4     537.6     904.5    1059.9    1214.3
18      Taxes(@30%)    75.0     176.5     161.3     271.4     318.0     364.3
19
20 NET INCOME         275.0     511.9     476.3     733.2     841.9     950.0
XFER SS.WK3
```

Additional Mark and Transfer Features

In addition to the features already discussed in this chapter (and on *pages 89-92*), there are two other Mark and Transfer features:

- There is a shortcut for marking and transferring a block of numbers.
- Information in several snapshots can be combined and then transferred in a single step—using the Mark More command.

Transferring a Block of Numbers

Normally, there is a one-to-one correspondence between the number of blocks you mark and the number of transfer commands needed to transfer the blocks. If you mark 10 blocks, you issue 10 transfer commands.

However, DESQview has a shortcut for marking and transferring numbers. You can mark an entire row or rectangular block of numbers (for example, 20 rows of 10 columns) and then transfer each number in the block separately. When you select **Transfer the first number,** the first number in the first block is transferred. Then, each time you select **Transfer the next number,** the next number in the same block is transferred—or, the next number in the next block if there are no more numbers in the current block.

To use this shortcut, the block of numbers you mark must not contain any blank entries or blank lines. Also, numbers are edited to remove all nonnumeric characters except periods and minus signs, and to convert a left parentheses to a minus sign.

You can often substitute this shortcut for the procedure given in *Transferring Rows and Columns*, in this chapter—although not in that particular example, because **Sample Spreadsheet** contains blank lines.

For example, if you have a table in DESQview Notepad that consists of 20 rows of 10 columns of numbers (without entries or blank lines), to transfer this table into 1-2-3 in the same (20x10) format:

- **Transfer the first number with the Transfer the first number command—followed by a right arrow (to move the cursor to the next column).**
- **Transfer the next 8 numbers with the Transfer the next number command—following each number by a right arrow.**
- **Transfer the 10th number with the Transfer the next number command—followed by 9 left arrows and a down arrow (to move the spreadsheet cursor to the beginning of the next row).**
- **Transfer the remaining 19 rows with the Transfer the rest of your data command.**

If the table has labels, mark three blocks: top labels, left labels, and the block of numbers. First, transfer the two sets of labels using the **Transfer**

the first line command. Then, transfer the block of numbers using the steps given above.

Combining Blocks of Information Using the Mark More Command

Normally, all the information you mark must be entirely contained in the current snapshot. The Mark More command lets you overcome this limitation and mark information contained in several snapshots:

- ☐ When the first command you issue after you display the Mark menu is **Mark Begin**, DESQview **discards** anything you previously marked and starts over with an empty **mark buffer.**
- ☐ When the first command you issue after you display the Mark menu is **Mark More**, DESQview **appends** whatever you mark to the **mark buffer.**

Thus, by using **Mark Begin** on the first snapshot and **Mark More** on subsequent snapshots, you can mark information in multiple snapshots. See the example , ***Building a Mark and Transfer Super-Script*** below.

The amount of information you can mark is limited by the amount of common memory that's currently available (see **Appendix A**). Common memory is the area of memory DESQview needs to manage window and save the information you mark. If you intend to mark more than a single full (25x80) screen's worth of information, you should increase the size of the Common Memory buffer before you start up DESQview—by 2K per additional screenful.

Except as the first command, **Mark More** and **Mark Begin** are equivalent.

Building a Mark and Transfer Super-Script

The *Transferring Rows and Columns* section of this chapter explains how to transfer a table from a word processing program (**Sample Spreadsheet**) to a spreadsheet program (**1-2-3**). It is limited, however, to transferring a table that fits entirely in one snapshot.

You can extend this procedure so that it marks a table that extends over multiple snapshots, and then transfers this table in a single step. Using DESQview's embedded learn capability, you can even build a script that performs this entire process with a single keystroke.

For example, let us assume that **Sample Spreadsheet**, which is 18-lines by 7-columns (excluding the heading), is just the beginning of a 200-line table that has been loaded into **DESQview Notepad.** And, let us also assume that you download this table every day (with different numbers) and thus want to be able to transfer it into 1-2-3 with a single keystroke.

- ■ **With Notepad as the current window, and the cursor at the beginning of the ASSETS line, start learning a script—call it Move Table.**

- **Then, immediately embed another learn—call it Init Table—that marks the word ASSETS (using Mark Begin), move the cursor down to the beginning of the Accts Receivable line, then terminate the learn by performing the Finish Script command.**

The trick to creating a script that works across multiple snapshots is, first, to create an initialization script that clears the **mark buffer** using **Mark Begin** and, then, to mark the information using only **Mark More.**

- **Now immediately start another script—call it Mark Page—and then follow the steps in *Rows and Columns: Defining the Blocks, page 160,* to mark the 18 lines of information visible—but using Mark More instead of Mark Begin.**

When you select **DONE** on the Mark menu, **Notepad** resumes running. So:

- **Press PgDn to display the next screen's worth of the table and align the cursor so it is at the beginning of the next unmarked row—initially, the 19th row, just below NET INCOME.**
- **Use the Time Delay command to insert a one-second delay in the script.**

Inserting a time delay ensures that, when you play back the script, **Notepad** will have time to completely display the page on the screen before the script continues.

- **End the Mark Page script.**
- **Play back Mark Page repeatedly until all 200 lines have been marked.**

To be sure the last iteration works correctly, you should add 18 extra lines (of 80 spaces each) to the end of the table before you start this procedure.

- **Switch to 1-2-3, set up the heading information (see *pages 160-162*), set the cursor to A2, and transfer ASSETS.**
- **Display the Transfer menu and follow the steps on *page 156* to transfer all of the 200 lines you marked into 1-2-3 at one time.**
- **End the script Move Table.**

Now, to transfer another instance of a 200-line table into **1-2-3** with a single keystroke:

- **Load the table into DESQview Notepad, put the cursor at the beginning of the ASSETS line, and play back the Move Table script by pressing the key you assigned it to.**

If you are using **DESQview Notepad** (or if your word processor can write a column to a text file), a more efficient method is to create a script that writes the 200 labels to one file, the (200x7) block of numbers to another file, and then switches to **1-2-3** and uses **Import Text** to read in the labels and **Import Numbers** to read in the numbers. (Use the file names **DESQTMP1** and **DESQTMP2** to avoid file-naming problems—see **Appendix** E.)

This procedure uses doubly nested embedded learns: **Move Table → Init Table → Mark Page. Mark Page** and **Init Table** are actually **relearned** every time you play back **Move Table.** However, you will hardly notice it, because it happens so fast.

Scissors

The Scissors command allows you to perform mark and transfer operations using **Copy, Cut,** and **Paste** instead of **Mark** and **Transfer**. Scissors differs from Mark and Transfer in that:

- ❑ Both the program that you mark the information in and the program that you transfer the information to must have been written expressly for DESQview using a DESQview API, and, also, must **explicitly support** the Scissors command[†].
- ❑ You can only mark a single block of information in a single snapshot.
- ❑ The information you mark can be manipulated by the program running in the window before it is saved. For example, if you marked cells in a spreadsheet, the program could copy the underlying formulas rather than the contents of the cells—if it wanted to. Similarly, the program determines how information is deleted when you use the Cut command.
- ❑ The Paste operation is performed entirely by the program. It can type in the information, as Transfer does, or perform whatever other type of transfer it desires. For example, if you transfer formulas from another spreadsheet program, it could convert them into its own formula format.

To use Scissors:

- **Display the DESQview menu and select Scissors to display the Scissors menu.**
- **Select the Copy or Cut command to display the Copy or Cut menu and cause the mouse cursor—a diamond—to appear in the current window.**

Then, proceed in the same manner as for the Mark command:

- **Move the mouse cursor to the first character of the text you want to copy or cut and select Mark Begin. Then move the cursor until the**

[†] A program supports the Scissors command only if an **X** appears on the **Scissors** line when you display the DESQview menu while the program is running. Programs written expressly for DESQview by Quarterdeck—such as Add a Program, Change a Program, DESQview Companions, and so forth—**do not** support the Scissors command.

reverse video box encloses the last character of the block you want, and select Mark End.

Then, to paste the marked block of information:

- **Switch to the program where you want to paste the block, display the DESQview menu, select Scissors to display the Scissors menu, and then select Paste to display the Paste menu and the block of text you marked.**
- **Move the block of text around until it is positioned at the point where you want it to be pasted. Then, select DONE.**

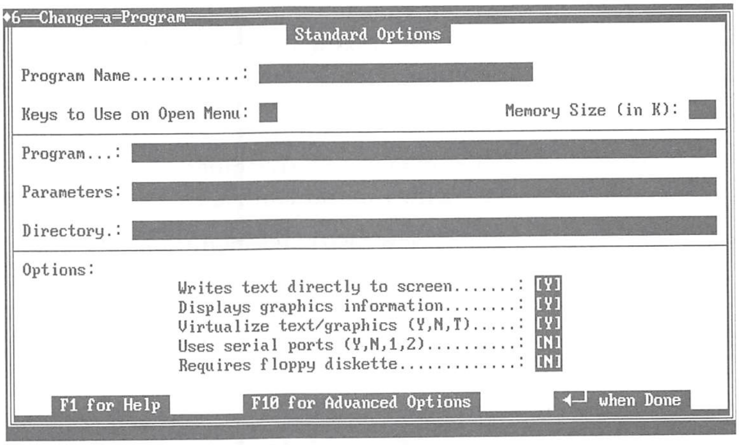
Remember, it is up to the program how it performs the paste operation.

Notes:

Changing a Program's Information

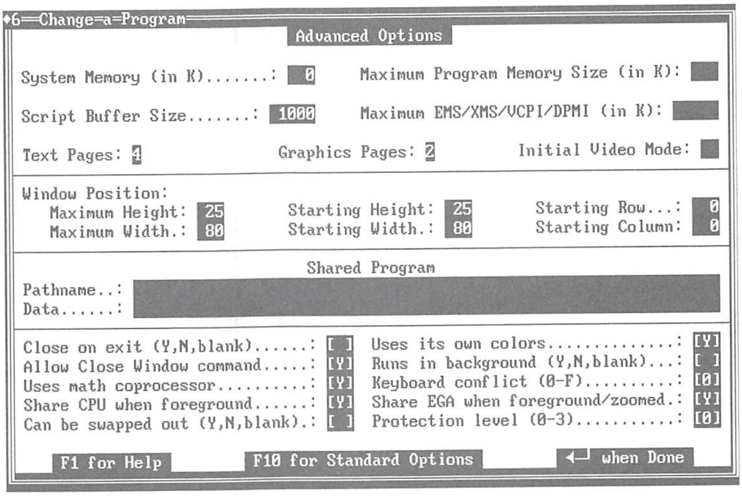
The Change a Program menu gives you access to the complete set of information that DESQview has for a program—in two screens. This is the information that is read in from/written out to the .DVP file DESQview requires to run the program. The first screen shows the basic information about the program. The second screen shows the advanced program information. To page between the two screens, press **F10.**

On line Help is available for any item. To access Help, press **F1**.



```
♦6═Change═a═Program═
                         Standard Options

Program Name............:

Keys to Use on Open Menu:                    Memory Size (in K):

Program...:

Parameters:

Directory.:

Options:
              Writes text directly to screen.......: [Y]
              Displays graphics information........: [Y]
              Virtualize text/graphics (Y,N,T).....: [Y]
              Uses serial ports (Y,N,1,2)..........: [N]
              Requires floppy diskette.............: [N]

    F1 for Help      F10 for Advanced Options      ◄┘ when Done
```

Screen 1: Basic Program Information



```
♦6═Change═a═Program═
                         Advanced Options

System Memory (in K).......:   0   Maximum Program Memory Size (in K):

Script Buffer Size.......: 1000    Maximum EMS/XMS/VCPI/DPMI (in K):

Text Pages: 4             Graphics Pages: 2           Initial Video Mode:

Window Position:
   Maximum Height: 25        Starting Height: 25        Starting Row...:  0
   Maximum Width.: 80        Starting Width.: 80        Starting Column:  0

                            Shared Program
Pathname..:
Data......:

Close on exit (Y,N,blank)......: [ ]  Uses its own colors.............: [Y]
Allow Close Window command.....: [Y]  Runs in background (Y,N,blank)...: [ ]
Uses math coprocessor..........: [Y]  Keyboard conflict (0-F)..........: [0]
Share CPU when foreground......: [Y]  Share EGA when foreground/zoomed.: [Y]
Can be swapped out (Y,N,blank).: [ ]  Protection level (0-3)...........: [0]

    F1 for Help      F10 for Standard Options      ◄┘ when Done
```

Screen 2: Advanced Program Information

Telling DESQview About a Program

For DESQview to run a program, it needs to know something about the program. At a minimum, DESQview needs to know where the program is stored, the DOS command that starts it up, and how much memory it needs. Also, there are additional settings you can use to configure the program more precisely.

The Add a Program Command

You install a program using the Add a Program command (see ***pages 100-103***). To make this as easy as possible, DESQview comes with all the necessary information (except where the program is stored) already set up for many popular programs. All you need do is tell DESQview which programs you want.

Understanding How DESQview Runs a Program

All DESQview's knowledge about the programs on the Add a Program menu is contained in the file, **DESQVIEW.DIR**. When you install a program, DESQview extracts the relevant information from this file and creates a **DESQview Program Information File (DVP),** named **xx-PIF.DVP**, that it stores on the drive and directory from which you started DESQview (most commonly, **C:\DV**)—where **xx** are the keys you use to select the program on the Open Window menu.

DESQview also comes with special loaders that permit many of the popular programs that are misbehaved to run in small windows and in background anyway. Loaders have the name **xx-LOAD.COM**, and are automatically copied onto your hard disk for you when you install DESQview.

Each time you select a program to start up from the Open Window menu, DESQview reads its DVP to determine how to configure it and what DOS command to use to start it up. If the program has a loader, that loader is used automatically to load the program (unless you override it).

If the program you want to install is not listed on the Add a Program menu, install it using the Add OTHER Program command (see ***Adding A Program*** in **Chapter 3**). You can use a Program Information File (PIF), if you have one. If not, just enter the necessary information.

The Change a Program Command

The Change a Program command lets you edit the information in a program's DVP. Just display the Change a Program menu and make the changes you want. When you press ↵, to indicate you are finished, the current DVP is saved with the extension **BAK** and then the program's DVP is updated to reflect the changes you made. The changes you make do not take effect until the next time you start up the program—they do not apply to any instances of the program that are currently running.

Overview of the Change a Program Screens

Change a Program consists of two screens of data and 15 options that you can turn ON or OFF (by entering Y or N in the space provided next to the option's name). They group into five overall factors that you can control for a program:

- What appears on the Open Window menu for the program.
- What DOS command is used to start up the program.
- How memory is allocated for the program.
- How the program behaves as you run it in DESQview.
- How the program behaves on an 80386 or higher PC with QEMM (DESQview 386).

The most important information is listed on the first (basic) screen. The second (advanced) screen is primarily used to fine tune how your program runs in DESQview.

Conventions

The remainder of this chapter discusses the factors listed above. To help you find the description of a particular field or option:

- Entries that appear in the form **Program Name** identify the major description of a particular field or option on the first (basic) Change a Program screen.
- Entries that appear in the form **Initial Video Mode** identify the major description of a particular field or option on the second (advanced) Change a Program screen.

Creating an Open Window Menu Entry

The entry that appears on the Open Window menu for a program is defined by:

- The **Program Name** field, which specifies whatever text you want—up to 30 characters long. This is also the name that appears on the top frame bar of the program's window when the program is running.

  Open Window menu entries are sorted in alphabetical order, first by Program Name and then by Keys to Use on Open Menu. This makes it easy to group related applications together.

- The **Keys to Use on Open Menu** field, which specifies the keys you want to use to select the program. The keys should consist of either one or two characters. (We recommend you use two characters to avoid future naming conflicts.) The keys you pick must be different from any that are currently listed on the Open Window menu.

  These keys also define the file names DESQview uses for some of the files related to the program (also see **Appendix G**):

xx-PIF.DVP is the program's DESQview Program Information File (DVP).

xx-SCRIP.DVS is the program's scripts file—if any.

Starting Up a Program

Perhaps the most important information you must supply DESQview about a program is how to start it up:

- The **Program** field specifies the DOS command used to start up the program. Basically, you should enter the command you type to DOS to start up the program outside of DESQview, preceded by the path (drive and directory) where the program is stored—namely, **P:\ProgDir\Program.** However, the exact form entered determines:

    Whether DESQview will load a command processor (e.g., COMMAND.COM) in the window with the program.

    Whether a special DESQview loader will be used to load the program.

    Whether you are creating a DOS window rather than loading a program.

  The remainder of this section, ***Starting Up a Program***, discusses this.

- The **Parameters** field specifies any additional information you want to supply to the program when you start it up. So, effectively, the Program field appears to the program as if it also contains **Parameters.**

  To supply variable information, enter ? as the last (or only) character. DESQview will pause and let you manually complete the command before it loads the program.

- The **Directory** field specifies the path on which you have stored the data files for the program. If this is the same as the path where you have stored the program, you can omit the path in the Program field.

  If you leave the Directory field empty, the program's data files are assumed to be on the path from which you started DESQview (most commonly, **C:\DV**). So, as a rule, you should **always** specify a path in the Directory field.

  Occasionally a program requires that the default path be the one on which the program is stored to work properly. Programs that use overlays often require this. In such cases, you must specify **P:\ProgDir** in the Directory field and cannot specify a separate **D:\DataDir** data path.

When you install a program, the Path field information you specify on the Program Location menu is entered in the Directory field rather than in the Program field. This allows the program to operate properly in the most common case— when the program and its data files are both on the same path. However, if the program is on a different path than its data files, you can manually modify the Program and Directory fields to reflect this.

The Program, Parameters, and Directory fields can each be up to 64 characters long.

Controlling How a Program is Loaded

Given that your system and the Change a Program menu for the program are configured as shown below:

Path in effect when you started up DESQview Path where DESQview is stored	**Initial Path** **C:\DV**
Contents of the Program field Contents of the Parameters field Contents of the Directory field	**P:\ProgDir\Program** **Parameters** **D:\DataDir**

DESQview loads and runs the program by logically performing the following sequence of DOS commands:

1. **PATH InitialPath; C:\DV; P:\ProgDir** ↵
2. **D:** ↵
3. **CD\DataDir** ↵
4. **Program (+ Parameters, if any)**↵

If **D:** or **\DataDir** is omitted, the corresponding command (**2** or **3**) is omitted. If you omit the contents of the Directory field (**D:\DataDir**) completely, the default path will be the path at the time you started DESQview (most commonly, **C:\DV**). If DESQview—rather than DOS (see below)— loads the program, the **PATH** command (**1**) is not performed—the program must be stored on **P:\ProgDir** or **C:\DV** or DESQview will not find the executable file.

How DESQview Loads a Program

Whether or not DESQview loads the command processor in the window is determined by the format of the program file name in the Program field, and on how **Close on Exit** (see *page 187*) is set. If the file name does not have an extension—for example, **123**—DESQview loads a command processor as well as **123** in the window.

Loading a command processor has the advantage that you can load batch files, but the disadvantage that loading requires minimum memory of 48K—enough to load the command processor and a program of up to about 25-27K.

DESQview can load a program without the command processor—but **not** a batch file. If you want DESQview to load the program without the command processor:

- Enter the program name as **PROGRAM.EXE** or **PROGRAM.COM**, rather than just **PROGRAM.**
- Turn ON (Y) the **Close on exit** option (or leave it blank).

Letting DESQview load the program without the command processor has the advantage that you can load executable programs (.COM or .EXE) as small as 1K, rather than 48K. The **Close on exit** option must be turned ON (Y) because there will not be any command processor available to accept your commands when the program terminates. See the entry on **Close on Exit** on *page 187* for more information.

When a Program Has a Custom DESQview Loader

When a program has a special DESQview loader, the Program field contains the command to start up the loader (**L:\LoadDir\xx-LOAD.COM**) and the Parameters field contains the command to start up the program plus any program parameters (**P:\ProgDir\PROGRAM.EXT Parameters**)—where **xx-LOAD.COM** is the name of the loader for the program. Usually, **L:\LoadDir** is **C:\DV**—but it does not have to be. The program extension, **.EXT**, **must** be specified.

The Program and Directory fields are set up for you automatically when you install the program, so normally you do not have to concern yourself about loaders.

When a Program is Loaded from a Batch File

You can also enter the name of a batch file in the Program field. Normally, when you run a program (or programs) from a batch file, you should turn OFF the **Close on exit** option. If this option is ON, the window will close automatically after running the first program in the batch file. To close the window on finishing the batch file, put **EXIT** as its last command. (If the batch file runs only one program, and it is the last command in the file, you can leave **Close on exit** ON.)

Set **Memory Size (in K)** for a batch file to the size of the largest program plus any TSRs your batch loads and 7K for the command processor.[†] The minimum memory size for a batch loader is 48K.

Creating a DOS Window

To create a DOS window, leave the Program field empty, or enter a DOS command—for example, **PROMPT.** If you enter a DOS command, be sure to put the parameters in the Parameters field and not in the Program field.

When a Program is Full-Screen-Only

There are two types of programs: those that can run in small windows (and in background) and those that cannot, and therefore run full-screen-only:

- The **Writes text directly to screen** option specifies, when ON, that the program writes directly to the screen (by this we mean the video hardware) and, therefore, requires the entire screen when it is running. A program that writes text directly to the screen can run in a small window (and, therefore, in background) without overwriting the window of another program if you are running DESQview 386 (DESQview with QEMM) and you set the Vitualize text/graphics (Y, N, T) option to Y or T.

[†] Certain versions or brands of DOS may require more or less than 7K.

To find out whether a program writes text directly to the screen, turn OFF both the Writes text directly to screen and Virtualize text/graphics (Y, N, T) options, then run the program in a small window. If any program text information appears outside the window boundaries, the program does write text directly to the screen and you must turn the Writes text directly to screen option back ON.

Most graphics programs write graphics directly to the screen.

When a Program is Copy-Protected

If a program is started from a copy-protected diskette, you can have DESQview remind you to load the diskette:

- The **Requires floppy diskette** option specifies, when ON, that the program resides on a floppy diskette. When you start up the program, DESQview will remind you to put the program diskette in the floppy drive.

When a Program Uses Serial Ports

- The **Uses serial ports (Y, N, 1, 2)** option tells DESQview which, if any, serial ports the program will use. Selecting **1** indicates COM1, selecting **2** indicates COM2, selecting Yes (Y) means all ports, selecting No (N) means neither COM1 nor COM 2 are used by that program (but the program can still access COM3 or COM4). You may not leave this option blank.

  When a program makes a connection to a serial port, it grabs exclusive access to that port. If another program was using the port at the time, it loses its connection. To protect against this, DESQview attempts to limit your program's access to only those serial ports you specify in the **Uses serial ports** (Y, N, 1, 2) option by hiding (at the DOS level) the unspecified serial ports (COM1 and/or COM2) from your program. However, regardless of how this option is set, DESQview cannot prevent a program from grabbing a serial port at the hardware level (via the port's I/O address). This can be a problem when the program inadvertently grabs a port from another program.

  If you enter Y to specify ALL ports, DESQview will allow a program to access all serial ports on your computer. DESQview's Auto Dialer feature lets you select any serial port for your modem.

Taking Advantage of an 80386 or i486 Processor

DESQview 386 is the combination of DESQview plus QEMM (the Quarterdeck Expanded Memory Manager). This combination offers features not possible with any other configuration.

When running DESQview 386 on an 80386 or i486 PC, a CGA, Hercules, EGA or VGA program can run in a small window, even when not "well-behaved." DESQview's ability to run most[†] programs in small windows is accomplished by "virtualization." With virtualization ON, DESQview 386 automatically intercepts the video output of programs which write directly to the screen and manages the screen data itself. Since this uses more expanded memory, for performance reasons, you can control which programs DESQview 386 virtualizes.

[†] Programs that run in video modes beyond the VGA standard, such as hi-res 256 color or hi-res 800 x 600 mode or protected mode graphics, cannot be virtualized. Also, programs running in 40 column text mode cannot be virtualized.

- The **Virtualize text/graphics (Y, N, T)** option specifies, when ON (Y), that DESQview should keep the program from writing directly to the screen under all circumstances. The program can then display its information in a DESQview window and run in background because DESQview is managing the program and the portion of the video output that displays in the window.

  When you specify No (OFF), DESQview's action is dependent upon how you set the **Writes text directly to screen** option. If your program writes directly to the screen, DESQview will not run your program in a small window. If your program does not write directly to the screen, DESQview will run the program in a small window.

  When you specify (T), for text only, DESQview will only virtualize the screen when your program is in text mode. If your program switches from text mode to graphics mode, the screen virtualization will stop. This option allows a program to run in a small window when in text mode, but use the screen directly when in graphics mode.

  Text mode virtualization causes very little performance degradation, whereas graphics virtualization can affect performance considerably—especially on EGA displays, so you would not want to use this option unnecessarily.

  For a character based program (text program) like WordPerfect, use a DESQview loader whenever available, and do not virtualize. The loader file will contain all information necessary to run the program in a small window and in background. For a graphics program, set virtualization ON. Also, see **Appendix K,** ***More About Virtualization***.

- The **Share EGA when foreground/zoomed** option specifies, when Yes (Y), for DESQview to allow other EGA graphics programs to run in background. If you enter no (N) to Share the EGA, DESQview will freeze EGA programs running in background when your program is zoomed to a full screen window. If you enter yes (Y), all EGA programs which are currently open in DESQview windows will run more slowly.

  If you want maximum performance in your foreground graphics program, you do not want other programs to be sharing your EGA hardware.

You can dynamically change this option, using DESQview's Tune Performance command. Setting it here makes it the default start-up mode of the program.

This option has no effect unless you are running in EGA mode.

- The **Protection Level (0-3)** option allows you to specify a protection level, if one is needed.

  DESQview uses the 80386 processor's protection capabilities to give you protection against misbehaved programs. Protection can result in some degradation of your program's performance.

  DESQview will exercise more protection the higher the protection level selected. Selecting 0 tells DESQview not to set up any special protection around your program. If you know your program is reliable and works without crashing, we strongly suggest that you do not set up any protection. If DESQview 386 detects that the program is trying to do something which might damage DESQview, DOS, or other programs, DESQview will post an error message (prior to the damage being done) describing in technical terms the action that seems dangerous. You may then abort the program, or turn off DESQview's protection and let the program proceed on its dangerous course. Sometimes you will be given a third option, of allowing this one violation to occur, but keeping the protection in place to detect further violations.

  Typically, you should abort the program if you get a protection violation. Then, try increasing the memory size for the program and try it again. If the violation no longer occurs, then the program probably required more memory than you had previously given it, but it failed to detect that it had insufficient memory. You might want to inform the program developer of this.

  If the protection violations continue, then perhaps the program has a bug in it, or perhaps it is doing something which, although potentially dangerous, is really all right. You can try lowering the protection level (or setting it to 0) and hope for the best.

  For further information on protection level settings, please contact Quarterdeck for a detailed technical white paper.

Allocating the Memory for a Program

You must supply DESQview information about how much memory a program requires:

- The **Memory Size (in K)** field specifies the minimum amount of memory the program needs. Normally, this is the minimum amount of memory needed to run the program. However, for very small programs (under 48K), you must take into account the method used to load the program. If DESQview loads the command processor in the window(see ***How DESQview Loads a Program, page 173***), the minimum memory size is 48K. If DESQview loads the program without the command processor, the minimum size is 1K.

In addition to the memory for the program itself, DESQview allocates approximately 9K to manage the program. If the **Displays graphics information** option is ON (see below), this value may increase by 12K, depending on the type of display adapter you have on your system.

NOTE: When a special DESQview loader is used to load the program, its size (2K-5K) is already included in the default memory size supplied in the program's DVP.

Working with a Graphics Program

If the program ever displays graphics information on the screen, you must tell DESQview so it can reserve extra memory—because it takes more memory to save a graphics screen than it does to save a text screen.

- The **Displays graphics information** option specifies, when ON, that the program displays some or all of its information as graphics. You must tell DESQview so it can allocate extra memory to save and restore the graphics screen.

Controlling Whether a Program Can Be Swapped

When you try to start up a program, but there is not enough memory to load it, DESQview tries to swap out one or more programs to free up the memory it needs. You can control whether a program should be swapped out:

- The **Can be swapped out of memory (Y,N, Blank)** option specifies, when ON, that the program can be swapped out of memory to disk, RAM disk, or expanded memory when DESQview needs memory to load a new program. This allows DESQview to have more windows open than can fit in your PC's memory.

  Most programs can be swapped to disk. The major exception is communications programs. Communications programs should usually have this option turned OFF—because they must remain in memory at all times to manage the communications line. However, in certain instances, they can be swappable. See ***page 252.***

  If you leave this option blank, DESQview will decide whether or not to swap based on the settings of other options.

More About Allocating Memory

An Overview

In addition to a minimum memory size, you can specify a maximum memory size:

- The **Maximum Program Memory Size (in K)** field specifies the maximum amount of program memory DESQview allocates to the program.

  Normally, this field is empty. If empty, DESQview allocates exactly the minimum amount of memory requested in the Memory Size (in K) field.

  If you specify a value for the Maximum Program Memory Size, it means that DESQview should allocate as much memory as it can to the program—but no less than the minimum and no more than the maximum. The amount of memory the program actually gets will depend on the configuration of your programs and windows at the time the program starts up.

The method DESQview uses to allocate memory is:

First, DESQview determines how much memory it has available to load a program:

- The largest available contiguous area of program memory (in the 0K-640K area) is calculated.
- If you have EMS 4 or EEMS memory, the amount of unused EMS 4/EEMS memory is calculated.

Then, using these values, DESQview determines if it is possible to supply at least the minimum amount of memory the program requires from your existing memory configuration.

If enough memory exists to load the program, DESQview then determines the actual amount of memory to allocate by examining the Maximum Program Size (in K) field:

- If this field is empty, DESQview allocates exactly the minimum amount of memory requested.
- If this field specifies a value (larger than the minimum), the program is allocated all the memory now available, up to the maximum specified.

If there is not enough memory available to load the program, DESQview swaps out one or more programs (if possible) until it has freed up at least the minimum amount of memory needed:

- If DESQview succeeds, the program is loaded according to the preceding step.
- If DESQview fails, the program cannot be loaded—see **Appendices E** and **F**.

The memory freed up by swapping out programs may be either program memory or EMS 4/EEMS memory (if you have EMS 4 or EEMS memory) depending on what programs were swapped out.

Allocating System Memory for a Program

The sizes specified in the Memory Size (in K) and Maximum Program Memory Size (in K) fields only control how memory is allocated to the program itself. DESQview also requires memory to manage the program. This area (about 2K) is automatically allocated in addition to the program memory. Sometimes, however, you need more system memory than this:

- The **System Memory (in K)** field specifies the amount of additional system memory to set aside for the program. This value should be zero unless the program was written expressly for DESQview––such as built-in DESQview programs and DESQview Companions—or unless you want to force the graphics screen (see ***page 182***) to be saved in program memory.

Included in the automatically allocated area is room to save the interrupt vectors and the coprocessor status information:

- The **Uses math coprocessor** option specifies, when ON, that DESQview should set aside additional system memory for the information needed to manage the coprocessor chip. **This setting has no effect on whether the program can use the coprocessor.** That is up to the program. Also, this setting has no effect if you do not have a math coprocessor installed.

Allocating Screen Memory for a Program

DESQview also requires additional memory to save what is on the screen:

- The **Text Pages** field specifies the amount of memory to set aside for the information on your screen when the program is operating in text mode—but in **pages**, not **K** (see below). This text screen area is where your screen's contents are stored when you switch away from the program or while the program is running in a small window.
- The **Graphics Pages** field specifies the amount of memory to set aside for the information on your screen when the program is operating in graphics mode—also in **pages**. This graphics screen area is where your screen's contents are stored when you switch away from the program.
- The **Displays graphics information** option is a shortcut for setting **Graphics Pages.** When you turn this option ON, **Graphics pages** is set

to 1 (or to the last nonzero value you entered previously). When you turn this option OFF, **Graphics Pages** is set to zero.

Information that appears on your video display screen is written there by your **display adapter** board, in one of two ways: as text or as graphics. All display adapters can display text. Only some can display graphics as well.

Normally, a display adapter only displays one screen's worth of information, since that is all you can see. However, some display adapters can maintain several screens' worth of information at one time and switch instantly between them. When a display adapter does this, each screens' worth is called a "page." The size of a "page" varies from as little as 4K to as much as 128K. And, since some display adapters support multiple graphics pages, the total graphics screen that DESQview must manage can be quite large—up to 256K in size.

Allocating Memory for Text Pages

Text screen memory is the area of memory in which all the program's text pages are saved—and is **always** allocated out of the program memory area. Its size varies according to the type of display adapter you are using and the mode it is operating in, as shown in the following table:

Memory Allocation for a Text Screen

Number of text pages	Program Memory Allocated						
	Hercules (25x80)	CGA (25x80)	EGA/VGA (25-line mode)	VGA (30-line mode)	EGA/VGA (43-line mode)	VGA (50-line mode)	VGA (60-line mode)
1	4K	4K	4K	5K	7K	8K	10K
2	8K	8K	8K	10K	14K	16K	19K
3	12K	12K	12K	15K	21K	24K	29K
4	16K	16K	16K	19K	27K	32K	38K

Unless you are sure the program uses multiple text pages (almost none do—the only significant exception being BASIC), leave **Text Pages** set to 1—its normal default value. Otherwise, set it to the number of text pages the program uses.

When you have a program that is written expressly for DESQview, and **Text Pages** is set to 1, DESQview may allocate less space than indicated in the table because, in such cases, DESQview allocates only the amount of memory required to hold the largest screen that the program can display—namely, twice the product of **Maximum Height** and **Maximum Width** (see ***page 186***). For example, if the maximum height/width is specified as 10,60, DESQview would allocate about 1,200 bytes (2x10x60) rather than 4K. (When **Text Pages** is 2 or more, DESQview **always** allocates the amount of memory indicated in the table.)

Allocating Memory for Graphics Pages

Graphics screen memory is the area of memory in which all the program's graphics pages are saved. Its size varies according to the type of display adapter you are using and the mode it is operating in. Determining the amount of memory allocated to a graphics screen is more complicated than for a text screen—because its size can vary dynamically (as the program runs) from 16K to 256K. To accommodate this, DESQview tries to save graphics screens in expanded memory:

- If expanded memory exists and enough is available to save the graphics screen, DESQview uses expanded memory. In this case, the full graphics image remains on the screen even when you switch away from the program—and thus can be viewed simultaneously with other windows (for most EGA and VGA modes), even though the program isn't running.
- If expanded memory does not exist or enough is not available, when you switch away from the program, a **graphics curtain** is drawn over the screen and the graphics screen is swapped out to RAM disk or hard disk.

If you do not have expanded memory, and you want the graphics screen stored in program memory, set **System Memory (in K)** large enough to hold the largest graphics screen the program can ever have. (There is no value in taking this approach if you do have expanded memory.)

The table below shows the range of memory sizes that a graphics page can have. Although Hercules and CGA display adapters have several modes, DESQview always allocates 64K to a Hercules display adapter and 16K to a CGA display adapter. EGAs and VGAs, however, have a wider range of modes which programs can switch between. DESQview accommodates such behavior by managing EGA and VGA memory dynamically—that is, by adapting to the changing behavior of the program rather than permanently allocating a fixed-size area (unless you have allocated the graphics screen in program memory).

Memory Allocation for a Graphics Screen

Number of Graphics pages	Program Memory Allocated			
	Hercules (graphics mode)	CGA† (graphics mode)	EGA/VGA (medium resolution)	EGA/VGA (high resolution)
1	64K	16K	64K	128K
2	64K	N/A	128K	256K

All sizes in this table are approximate.†

If the program does not use graphics, set **Graphics Pages** to zero or turn OFF the **Displays graphics information** option (both of which have the same effect). If the program does use graphics, set **Graphics Pages** to 1 or turn ON the **Displays graphics information** option (both of which have the same effect). If you find a program's graphics display is not completely restored, you might be able to remedy this by increasing the value of **Graphics Pages**. The highest useful value you can enter is 8.

---

† Includes EGAs when operating in CGA- compatibility mode.

The value in **Graphics Pages** (or the setting of the **Displays graphics information** option) only affects whether the screen is properly saved and restored when you switch away to another program and then switch back. So, if you have a program that displays graphics information, but you do not want to save it when you switch away, just set **Graphics Pages** to zero (or turn OFF the **Displays graphics information** option). This is especially useful for programs that can quickly redraw their graphics information—such as Lotus 1-2-3.

Allocating a Scripts Buffer for a Program

DESQview requires memory to save a program's scripts—if any:

- The **Script Buffer Size** field specifies the amount of memory to set aside for the Program Scripts buffer (see ***page 138, page 145,*** and **Appendix A**). The default is 1K, which is generally enough for 20 or more routine scripts.

Managing How a Program Uses EMS/XMS/VCPI/DPMI

DESQview supports your program's use of expanded memory (EMS 3.2, EMS 4.0 and EEMS) and extended (XMS, VCPI and DPMI).

Some programs that use expanded or extended memory to store code or data immediately grab all available expanded or extended memory when they start up. Once a program takes expanded or extended memory for itself, it cannot be used for other purposes, until the program gives it back—which, most likely, will not happen until you close it down. To solve this problem, you can limit a program's expanded or extended memory:

- The **Maximum EMS/XMS/VCPI/DPMI (in K)** field specifies the maximum amount of expanded or extended memory a program should ever be allowed to have for data or code storage. (This value does not include memory for swapping the program's graphics screen—if any.) If this field is left empty, there is no limit on how much expanded memory or extended memory the program can have.

  The program will get the allotted amount of the type of memory that the program requests because QEMM recognizes the call for each type of memory and delivers it from the pool of extended/expanded memory available. The maximum amount of memory allowed in this field is 65534K.

Controlling a Program's Behavior

DESQview allows you to control many aspects of a program's behavior.

Controlling a Program's Appearance

You can control a program's appearance on the screen:

❑ The **Initial Video Mode** field is normally blank—meaning that, when DESQview starts up or switches to the program, it should display the program in whatever mode DESQview is in at the time, if possible. You may, if necessary, specify the hardware video mode (in hex) that DESQview should switch to when the program starts up or when it becomes the current (foreground) program (see table below).

If you have two displays, you can force a program to run on the one DESQview is not running on (the alternate monitor). The alternate monitor can only run multiple applications in full screen mode (no small windows).

If you are using two displays, the **Initial Video Mode** should specify the video mode for the monitor you use when you start DESQview (the DESQview monitor). To start a program on an alternate monitor, **Writes text directly to screen** should be set to Y (ON) and **Virtualize text/graphics** set to N (OFF) in addition to specifying the initial mode. If you start DESQview from a monochrome monitor, and you want to use the CGA, VGA or EGA monitor as the alternate monitor, set **Initial Video Mode** to 3.

Conversely, if you start DESQview on a CGA, VGA or EGA monitor, and want to switch to the monochrome monitor, set **Initial Video Mode** to 7.

Basic Video Modes

Initial Mode (in hex)			
0,1	—	—	—
2	Text	25x80	B&W
3	Text	25x80	Color
4	Graphics	200x320	Color
5	Graphics	200x320	Color
6	Graphics	200x640	B&W
7	Text	25x80	Monochrome
8-20	Graphics	Various	Both
21	Graphics	348x720	B&W
22	Graphics	347x720	B&W

Modes 7 to 20 are EGA/VGA graphics modes—refer to your EGA or VGA technical manual for more information. Modes 21 and 22 only apply to a Hercules display adapter; 21 selects graphics page 1 and 22 selects page 2.

DESQview tries to avoid switching video modes. So, when you tap the DESQ key, DESQview tries to display the DESQview menu in the mode the current window is in. (This may result in the DESQview menu appearing in black and white or may cause the screen to change color palettes—see **Appendix A**.) If this is not possible, DESQview draws the graphics curtain over the current window, then switches to a mode in which it can display the DESQview menu. Similarly, if you switch between programs in incompatible modes, DESQview curtains the one you switch away from.

The resolution of text modes 2 and 3 may be higher than 25x80 if you have an EGA or VGA DISPLAY adapter. EGAs can display 25x80 or 43x80 in these modes. VGAs can display 25x80, 30x80, 50x80, and 60x80. See *page 180*.

B&W indicates that information is being displayed in monochrome on a color display. **Monochrome** indicates that a monochrome display is being used.

The alternate monitor runs applications in full-screen mode only. So, when using an alternate monitor, always set Writes text directly to screen to Y and Virtualize text/graphics (Y, N, T) to N.

On a CGA, you can force a program to switch to color by setting **Initial Video Mode** to **3**—which is especially useful if you normally run programs in mode **6.**

If you have certain brands of Hercules-compatible display adapters, which do not let you detect their mode, you can set **Initial Video Mode** to the mode the program uses. (Otherwise, in such cases you must load **DVHERC.COM**—see **Appendix G**.)

DVHERC.COM is a program that comes with DESQview. It is copied to your DESQview directory (usually **C:\DV**) during installation. If you are experiencing display problems with a Hercules (or Hercules-compatible) card, run **DVHERC.COM** before running DESQview.

- ☐ The **Uses its own colors** option specifies, when ON, that a DOS text program has its own color scheme and that you wish to use this color scheme instead of the window colors that DESQview normally provides for the window as specified in DESQview Setup (see **Appendix A**). DESQview (logically) forces this option to ON if the Writes directly to screen option is ON. For more information on **Uses its own colors,** please see *page 189*.

Controlling a Program Window's Size and Position

You can control the program window's size and position by filling in the **Window Position** fields:

- The **Maximum Height/Width** fields specify the maximum height and width that the window can ever have. Unless the program is "well behaved" (see *page 11*) or written expressly for DESQview, the maximum height/width should not be set to less than 25,80. (If the program runs only in graphics video modes, and never uses text modes, set the maximum height/width to 0,30 to save screen memory—see *pages 180-183*.)
- The **Starting Row/Column/Height/Width** fields specify the initial position on the screen where the window for the program should be placed, and its height and width. **Row** and **Column** specify the position of the top-left corner of the window (excluding its frame, if any). You may set **Starting Height** to the number of lines desired for text modes of EGA or VGA adapters. Setting this value will cause DESQview to switch the screen to the proper mode when the window is opened, as well as when you switch back to it. For programs with **Writes Directly to Screen** set OFF, you must also set **Uses its own colors** ON. Both **Starting Height** and **Maximum Height** should be set to 43 for EGA and 50 for VGA. These are the only currently supported values.
- If these fields are left empty, the window is assigned one of the nine predefined window positions (see *page 78* and **Appendix A**).

Row and column offsets are counted from 0. So, the top-left corner of the screen is 0,0. There are two types of windows:

- A **full-screen window** must start at 0,0. The standard full-screen windows are 0,0,25,80 for a 25x80 window; 0,0,43,80 for a 43x80 window, and so forth.
- A **small window** must start at 1,1 or greater, and have a height and width that allow room for a frame. On a 25x80 screen, the largest "small" window is therefore 1,1,23,78, and so forth.

Programs written expressly for DESQview may create multiple windows, override the window position settings you specify, or create windows without frames. When a program has multiple windows, the Window Position settings apply to the main (task) window. If the main window is a small window, but has no frame, it may be positioned at 0,0.

Using a Shared Program

A shared program is a program written expressly for DESQview that can be used by several other programs simultaneously:

- The **Shared Program Pathname** field specifies the DOS file containing the shared program.

- The **Shared Program Data** field specifies data to be sent to the shared program.

These fields are primarily for use by program developers. **You cannot load a standard, off- the-shelf-program as a shared program.** Leave these fields empty unless you have a program that explicitly instructs you to use them.

Controlling How a Program is Closed Down

You can control how a program is closed down:

- The **Allow Close Window command** option specifies, when ON, that the program can be closed down using the Close Window menu. If this option is OFF, the program can only be closed down by performing the program's **quit** command. Furthermore, the DESQview Quit command will not be available as long as any program that has this option set to No (OFF) is running. (This prevents accidentally closing the program or quitting DESQview.)
- The **Close on exit (Y, N, blank)** option specifies, when ON, that when the program exits to DOS—usually as a result of your performing the program's quit command—DESQview should automatically perform the Close Window command. When OFF, the window will remain open and the DOS prompt appears when the program exits to DOS. This allows you to see messages the program generates on exit, without the window closing.

  When the Close on exit (Y, N, blank) option is OFF (N), DESQview loads the DOS command processor (typically COMMAND.COM) in the window before loading the program. When Close on exit (Y, N, blank) is ON (Y) or left blank, how DESQview loads the program is based on whether the Program field includes the program's .COM or .EXE file name extension. If included, DESQview loads the program directly; if not included, DESQview loads the command processor before loading the program. When the Close on exit (Y, N, blank) option is left blank, the window will close on exit when DESQview loads the program directly and will not close on exit when DESQview loads the command processor.

  See ***Controlling How a Program is Loaded, page 173.***

Controlling Whether a Program does Background Processing

You can control whether or not DESQview should try to let a program run in background when you switch away from it.

- The **Runs in background (Y,N, blank)** option specifies whether the program can continue to run in background when you switch away from it. By default, this option is set to blank which indicates that DESQview should decide when the program will be permitted to run in background and when it will not. You can explicitly turn this option ON or OFF, if you want.

It is usually best to leave this option blank. How DESQview determines whether or not to run a program in background is somewhat hardware/software dependent: DESQview can usually tell whether a program is actively processing/polling for input—or just waiting around—and adjust time slicing accordingly. In addition, the way a program writes to the screen and whether or not you are running QEMM affects background processing when you switch away from a window:

If you are running on an 80386 with QEMM, and a program that writes directly to the screen is virtualized, DESQview will allow it to run in the background when you switch away from that window.

If you are not running on an 80386 with QEMM and the **Writes text directly to screen** option for the program is set ON, or the program is displaying graphics information, DESQview will freeze the program when you switch away from it.

Unless **Runs in background** is explicitly set OFF, the program will always run in the background if **Writes text directly to screen** is set OFF.

There is another parameter you can enter in the **Runs in Background** field: **D**. If you enter D, the program will run in background except when any DOS calls are being made. This is a seldom-used option that is useful mainly for stabilizing certain terminal emulation programs. If you enter D, it can result in the program not running in background most of the time, depending on what the foreground—and other windows running in background—are doing at the DOS level.

The settings for background processing you make here may be temporarily overridden from the Tune Performance options available from the Rearrange menu. See *page 81*.

Sharing the Processor

If you want maximum performance in your foreground program, you do not want other programs to be running in background.

- The **Share CPU when foreground** option specifies, when Yes (Y), that you allow other programs to run in background when this program is executing in the foreground.

  If you enter No (N) to **Share CPU when foreground,** DESQview will freeze all programs running in background when the foreground program is executing.

When the foreground program is not executing (for example, waiting for a keyboard character), then background programs will be allowed to run.

You can dynamically change this option, using DESQview's Tune Performance command (See *page 81*).

Using a Program's Colors

You can control how DESQview displays a program in a window. The **Uses its own colors** option controls how certain aspects of the screen display are managed. If set to No (N), changes to the screen such as character set (font) or palette are disregarded. (They are logically remembered by the program, but not allowed to occur.) If set to Yes (Y), the font or palette changes the program makes are allowed and will take effect.

- The **Uses its own colors** option specifies, when ON, that the program has its own color scheme and that you wish to use this color scheme instead of the one that DESQview normally provides for the window (See **Appendix A**). The DESQview color scheme uses the standard IBM palette.

  If, outside of DESQview, you like the colors your program uses, you should select Yes (Y) for the **Uses its own colors** option. If you would like DESQview to display your program using colors from the DESQview palette, then you should select No (N).

  > Graphics programs often have their own palette. So that your graphics program has the same look and feel outside and inside DESQview, DESQview will use the palette of your graphics program when the program is zoomed to full screen.
  >
  > As you run multiple graphics programs in small windows in DESQview 386, you will notice that your programs often change colors—when you bring up the DESQview menu or when you switch windows. The reason is that DESQview sets the entire display according to the palette specified by the foreground program.
  >
  > Two graphics programs, with palettes different from the IBM palette, are Microsoft Windows and Digital Research's GEM. Not only have these two programs redefined the palette—but you will notice that when you have Ventura Publisher (the GEM version) and Microsoft Excel (the Windows version) on the screen at the same time in small windows, switching to Excel will cause Ventura to change from black characters on a white background to white colors on a black background.
  >
  > If you find that the graphics programs in background windows are unreadable or you are bothered by the colors, you can fine-tune the colors of DESQview's palette and menus.

Using the DESQview Palette Program

To fine-tune the colors of your program and of DESQview menus, you have the following DESQview tools:

- The **DESQview Palette** program (**DVPAL.COM**) is included on your DESQview diskette. This program lets you change the palette for DESQview menus and those used by programs with **Uses it own colors** set to No.[†]
- Using DESQview Palette, you can create your own palette by choosing the intensity of blue, green and red in each color of the palette, restore the original DESQview palette, make the DESQview palette the same as the GEM or Windows palette, load and save palettes, and set blinking on or off.[††]
- You may save your personal palette to the default filename, DVSETUP.DV and it will be loaded each time you start DESQview.
- **DESQview Setup, Advanced Option, Colors** lets you change the color scheme of each text window displayed using the DESQview palette and change the color scheme of DESQview's menus.

See *page 88* for additional usage information for DESQview Palette.

If you change the DESQview palette, so that it is the same as Microsoft Window's palette, DESQview's menus will turn red. You can make these DESQview menus blue again by using the **Colors** option in **DESQview Setup.**

Controlling How Keys Are Sent to a Program

You can control how keys are sent to the program. DESQview has a 128-character buffer where it stores each key you type—or each key that is played back by a script or transferred by the Transfer command.

- The **Keyboard conflict (0-F)** option controls how DESQview manages this buffer and sends keys to the program. Unless you are the program's developer, the only way to determine the proper level for a program is to experiment. Set the level to **0** and play back a long script or transfer a large block of information. If keystrokes are dropped, enter a different value and try again. There are 16 possible values for this setting:

  0 is the default setting. It allows DESQview to buffer keys to maintain rapid type-ahead and present them to the application in a manner that best supports DESQview's macros and mark and transfer features.

  1, 2 and 3. These values modify the way DESQview manages keyboard input to the application. Keystrokes are still buffered, but the rate at which they are sent (and other characteristics) are changed.

[†] You will have to add DESQview Palette to DESQview's Open Window menu using the Add a Program command.

[††] Before using DESQview Palette, use Change a Program to set the Uses it own colors option to No and the Virtualize text/graphics to Yes for the graphics programs whose colors you wish to change. Then open these graphics programs and put them in small windows so that you can see how their colors change as you change the palette.

4 instructs DESQview to not buffer keystrokes and to modify its behavior somewhat when switching away from an application.

> The important idea with respect to keyboard conflict 4 is that it should be used with applications which obtain their keyboard input **directly** from the BIOS data area keyboard buffer. A significant symptom of the need for this keyboard conflict setting is a background application which appears to be getting the foreground application's keystrokes, or keyboard input which seems to be "created" for you.
>
> This setting also works in conjunction with Advanced Setup: Keyboard's maintain shift state option in the following way. If you have instructed DESQview to maintain shift states, then for each application with keyboard conflict 4 set (or its variations), DESQview will save and restore the full BIOS keyboard buffer.

5, 6 and 7. These values combine the keyboard management of keyboard conflict 4 with those of keyboard conflicts 1, 2 and 3 respectively.

8. Some 3270 and 5250 emulation programs and ill-behaved "pop-ups" are known to be helped with this setting. An undesirable side-effect of this setting is that keystrokes may occasionally be lost. Your need for the program that may be helped by this setting will have to be balanced against this side-effect.

9, A and B. These values combine the keyboard management of keyboard conflict 8 with those of keyboard conflicts 1, 2 and 3 respectively.

C. This keyboard conflict setting combines the effects of settings 4 and 8.

D, E and F. These values combine the keyboard management of keyboard conflict 4 and 8 with those of keyboard conflicts 1, 2 and 3 respectively.

If your program drops keys during the playback of a script or during a transfer, try keyboard conflicts 1 and 2. If your program, while in the background, appears to be receiving the foreground application's keystrokes, try keyboard conflict 4 while setting the Maintain separate shift states for each window? (Y/N) option to Y, the default, within the Setup: Advanced Options: Keyboard menu. If you are having keyboard problems with a 3270 or 5250 terminal emulation program or a pop-up program that appears to hang the system when its key is pressed, try keyboard conflict 8. If you find that your program has a combination of the previous problems, use the sum of those keyboard conflict values.

Also see **Appendix H.**

Notes:

A

The DESQview Setup Program

The Setup program that runs after you install DESQview can be run again, any time. You may run it within DESQview (if you have added it to your Open Window menu using Add a Program) or you may run it outside DESQview, from DOS. When you run it from inside DESQview, changes will not take effect until the next time you start up DESQview.

When you install DESQview on your system, certain assumptions are made about how your system is configured and about how you would like DESQview's options set. You can change these default assumptions by running the Setup program.

Assuming that you have installed DESQview in the **DV** directory of drive C on your hard disk[†]:

- **Type C: and press ↵ to change the default drive to C.**
- **Type CD\DV and press ↵ to change the default directory to DV.**
- **Type SETUP and press ↵.**

This loads the Setup program. Then the DESQview copyright notice appears for a moment and the main DESQview Setup menu appears. You can choose the simple setup procedure or the advanced one:

- ❑ **Spacebar** selects the simple setup procedure, designed for the first-time user.
- ❑ ↵ selects the advanced setup procedure, designed for the experienced user. It lets you configure all of DESQview's options.

- **Press the spacebar or ↵.**

When you type **SETUP**, you actually invoke a batch file that starts up DESQview in a special mode. In this special mode, the DESQ key is disabled, and DESQview automatically closes down when you finish the Setup program.

[†] If you are running on a floppy-based system rather than on a hard disk system, follow these steps instead:

- **Place your everyday DESQview diskette in drive A.**
- **Type A: and press ↵ to set the default drive to A.**
- **Type SETUP and press ↵.**

Setup for the First-Time User

The main DESQview Setup menu gives you the choice of using either the simple setup procedure, for the first-time user, or the advanced setup procedure, for the experienced user. If you choose the simple procedure, you need answer only a few basic questions:

- If you have a video card that supports color, Setup asks you if you wish DESQview to use color.
- If you do not have a mouse driver installed (or DESQview's Install didn't find your mouse for some reason), Setup asks you if you wish to use a mouse.
- Additionally, in the event that your system has extended memory installed and no XMS memory manager is installed, Simple Setup will ask you if you wish to install QEXT.SYS, which is provided on your DESQview diskette and copied to the diskette or directory on which you installed DESQview. If you are currently using HIMEM.SYS, you should remove it and let QEXT.SYS supply these services instead.

A file called DVXMS.DVR is also supplied with DESQview. This is a driver which DESQview will automatically load when it starts up if you are using an XMS driver (i.e., QEXT, IMEM or QEMM Version 5 or higher). DVXMS.DVR allows DESQview to arbitrate the use of XMS so that:

- If you use DESQview's Close Window command to shut down a program which is using XMS memory, DESQview will release those XMS resources.
- You can limit the amount of XMS memory that a program can access by setting the desired value in the **Maximum EMS/XMS/VCPI/DPMI (in K)** field on the Change a Program Menu (second screen).
- Multiple windows running Lotus 1-2-3 Rel 3 can be open in DESQview on an 80286 PC with this XMS support. Otherwise, you would only be able to open one 1-2-3 Rel 3 window.

All other DESQview options are given default values.

Simple Setup: Monitor

The simple setup procedure examines your system's hardware configuration to see what type of display adapter board is installed:

- If a **monochrome board** or a **Hercules board** (or compatible) is installed, no monitor question is asked.
- If a **Color Graphics adapter (CGA) board, an Enhanced Graphics adapter (EGA) board,** or a **Video Graphics Array (VGA) board** is installed, you are asked:

  Whether you want DESQview to use color. Sometimes a monochrome monitor is attached to a **color** adapter board, giving gray scale instead of true color. In this configuration, you will usually want to turn off

color. For example, some portable and laptop PCs have this configuration.

Simple Setup: Mouse

Next, the simple setup procedure examines your system to see if any of the mouse drivers it knows about have been loaded:

- ☐ If no mouse driver is loaded, you are asked if you have a mouse installed on your system.

Finally, as noted on the previous page, if DESQview detects extended memory, but no XMS driver, you will be asked if you want to use one.

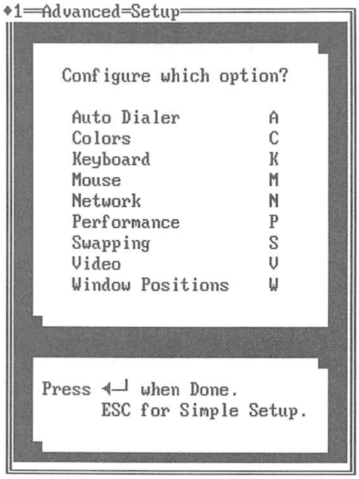
That is all. Now, the next time you start up DESQview, the choices you just made will be in effect.

If you have a monochrome video adapter, a mouse driver installed and an XMS manager installed (if extended memory is present) then Setup will not ask you anything.

Normally, the Setup program is run automatically when you install DESQview. However, should you install DESQview without running the Setup program, DESQview will assume that you have no mouse and, if you have a CGA, EGA, or VGA board, that it requires synchronization and displays multiple colors.

Setup for Advanced User

If you choose advanced setup, the following window appears:



```
♦1═Advanced═Setup═

  Configure which option?

   Auto Dialer          A
   Colors               C
   Keyboard             K
   Mouse                M
   Network              N
   Performance          P
   Swapping             S
   Video                V
   Window Positions     W

Press ◄┘ when Done.
      ESC for Simple Setup.
```

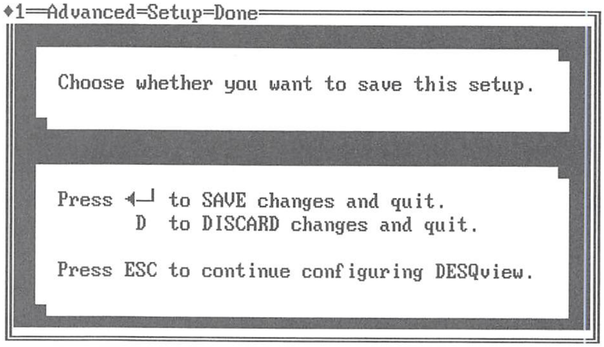
This window lists the complete set of DESQview options that you can configure using the Setup program. The following sections of this appendix explain each of these options in detail. To select an option:

- **Type the letter of the option you want.**

When you have changed all the options to the values you want:

- **Press ↵.**

The following window appears:



```
♦1═Advanced═Setup═Done═

  Choose whether you want to save this setup.

  Press ◄┘ to SAVE changes and quit.
         D  to DISCARD changes and quit.

  Press ESC to continue configuring DESQview.
```

To store the changes you have made:

- **Press ↵.**

The Setup program is closed down. Now, to put the changes you made to DESQview's options into effect:

- **Start up DESQview.**

Advanced Setup: Auto Dialer

The Auto Dialer option lets you specify:

- What port your modem is attached to.
- What baud rate you want to dial at.
- What names and access codes you want to appear on the Dial menu.
- What dialer protocol you are using.

What Port?

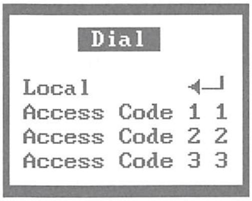
Your modem can be attached to communications port 1, 2, 3 or 4.

What Baud Rate?

Available baud rates are 300, 600, 1200, 2400, 4800, and 9600. If you will be using the Auto Dialer while running a communications program, select **Leave As Is** to prevent the Auto Dialer from resetting your communications port.

What Access Codes?

The Dial Menu (see *page 95*) initially appears as:



Each access code is set to dial **1**. You can replace the string **Access Code n** with any text you choose—for example, **Sprint, MCI, AT&T.** You can replace the default access code **1** by any access code up to 25 digits long. You can embed any characters that your modem understands in this access code. (See *page 95* for the characters that a Hayes modem understands.)

NOTE: To force your communications port to set to a particular rate when a number is dialed, enter ***^1*** *through* ***^6*** *as the first two characters of* ***Phone Number & Code****, where* ***^1*** *corresponds to* ***300 Baud, ^2*** *to* ***600 Baud, ^3*** *to* ***1200 Baud, ^4*** *to* ***2400 Baud, ^5*** *to* ***4800 Baud****, and* ***^6*** *to* ***9600 Baud.***

What Protocol?

The Auto Dialer is initially configured to use Hayes Smartmodem protocol. If your modem is not fully Hayes-compatible, you can change the protocol by changing **Prefix** to specify the commands to send before the number, **Postfix** to specify the commands to send after the number, and **Hangup** to specify the command to hang up the modem. Setup recognizes **^X** as meaning **Ctrl-X.**

It is not possible to reconfigure all modems to work with DESQview's Auto Dialer feature using this method. If there are no values that work for your modem in these three fields, you cannot use that modem with the Auto Dialer.

Advanced Setup: Colors

The Colors option lets you control:

- ☐ Whether you want DESQview to use color.
- ☐ What colors you want DESQview to use for programs that are not written for color and what colors you want DESQview to use for DESQview menus (if you are using color).
- ☐ What colors you want DESQview to use for programs written expressly for DESQview (if you are using color).

The Colors option is not selectable if you are using a monochrome monitor.

Use Color?

A Color Graphics adapter (CGA) board, despite its name, may be connected to a monochrome monitor. When you do this, gray scale is displayed instead of true color. In this configuration, you will usually want to turn off color. For example, most portable and laptop PCs have this configuration.

What Window Colors?

If you elect to use color, you can define five color schemes:

- ☐ Four window color schemes.
- ☐ A color scheme for DESQview menus.

When you open a window, DESQview displays the window in one of its four window color schemes—in round-robin fashion. Windows 1, 5, 9, and so forth receive the first color scheme. Windows 2, 6, 10, and so forth receive the second color scheme, and so on. When you display a DESQview menu, it is displayed in the DESQview menu color scheme. Color schemes selected in Setup will be the default colors. They can be overridden by specifying that a program use its own colors (Change a Program menu) or by using DESQview Palette (see *page 88*).

Each **color scheme** consists of a text color and a background color. Text can appear in normal intensity or highlighted.

Whether a window receives a color scheme from DESQview, or uses its own inherent color scheme, is controlled by the **Writes text directly to screen** and **Uses its own colors** options on the Change a Program menu.

What Program Colors?

If you are running in color, you can select eight color schemes—for **normal text**, **emphasized normal text**, **error text**, and so forth—for programs written expressly for DESQview.

Advanced Setup: Keyboard

The Keyboard option lets you specify:

- Whether you want DESQview's Learn facility to be available.
- What quoting character you want Learn to use (if you are using Learn).
- How much memory DESQview should allocate for its various Learn buffers (if you are using Learn).
- Whether you want to change the keystrokes used to generate the DESQ key, the Learn key, and the key used to toggle the keyboard mouse. You can also enable the keyboard mouse feature in this menu.

Use Learn?

One of DESQview's most powerful features is Learn—see **Chapter 5, *Learn: DESQview's Keystroke Macro Feature***. Normally, you want Learn enabled. The main exceptions would be when you have already developed a macro library using another keystroke macro program or you want to save the amount of memory Learn uses [approximately 9K for the Learn driver and 1K for each (default length) script buffer].

What Quoting Character?

When you create Learn scripts (keystroke macros), you assign each script you create to a key on the keyboard. The key you reassign (called the **mapped key**) no longer performs its original function. When you press it, the script defined for it is played back. The **quoting character** lets you override a key's mapped meaning and perform the key's original action instead.

The default quoting character is **‘**. If you elect to use Learn, you can specify a different quoting character. (The character you select must be one of the 95 standard ASCII characters, 32-126.) Also see *page 53*.

What Buffer Sizes?

DESQview has three global script buffers, plus a script buffer for each program you run in DESQview. The size of the script buffer for a program is determined by **Script Buffer Size** on the Change a Program menu for that program. The size of each global script buffer is determined by the setting you make in the Keyboard option:

- The **DESQview Scripts** buffer is the area of memory where all scripts learned on all DESQview menus are stored (see *page 145*).
- The **Learn Scripts** buffer is the area of memory used to record a script while it's being learned. When the script is complete, it is transferred into the DESQview Scripts buffer or the Program Scripts buffer. Thus, the Learn Scripts buffer must be large enough to accommodate the longest script you ever intend to learn, including nested scripts and embedded learns (see *page 145*).
- The **Playback Scripts** buffer is the area of memory used when you perform (play back) a script. DESQview begins by loading the entire script into this buffer. Then it performs the script. If the script invokes other scripts, these other scripts are also loaded into this buffer as

needed. When playback of a script (or nested script) is complete, the buffer space for that script is released. Thus, the Playback Scripts buffer must be large enough to contain the largest script (including all nested scripts and embedded learns) that you ever intend to play back (see *page 140*).

The size of all script buffers is initially set to 1,024 bytes each. For more information on the DESQview Scripts, Learn Scripts, and Playback Scripts buffers, see **Chapter 5**, ***Learn: DESQview's Keystroke Macro Feature***.

Maintain Separate Shift States?

The BIOS data area contains information on the shift states of the computer. If you enter "Y" here to turn this option ON, DESQview will keep track of the state of the NUM LOCK, CAPS LOCK, SCROLL LOCK or PAUSE keys for each window. When running concurrent applications, it may be useful to have the keypad set in NUM LOCK for some of your applications, while other applications see cursor movement from the numeric keypad. For example, if NUM LOCK was ON when you switched away from Lotus 1-2-3, regardless of how you may have used it when you typed into a WordPerfect window, NUM LOCK would be engaged when you came back to 1-2-3.

What System Keys?

DESQview takes three keys for its own use:

- The **DESQ key** (normally, Alt) is the key you press to get DESQview's attention and display the DESQview menu (see *page 45*).
- The **Learn key** (normally, Shift-Alt) is the key you use to display the Learn menu, and thereby invoke DESQview's Learn facility (see *page 46*).
- The **keyboard mouse toggle key** (normally, inactive) is the key you use to turn the keyboard mouse ON or OFF. It is only used if you do **not** have a real (hardware) mouse installed on your system (see *page 61*).

These keys can be redefined.

By default, the **Keyboard Mouse Key** is set to 0 (disabled). If you want to enable the keyboard mouse, choose a key to activate the keyboard mouse.

For IBM Topview compatibility, the keyboard mouse key should be set to Key = C, Which = E, Alt = N, Shift = N and Ctrl = E, which specifies either Ctrl key.

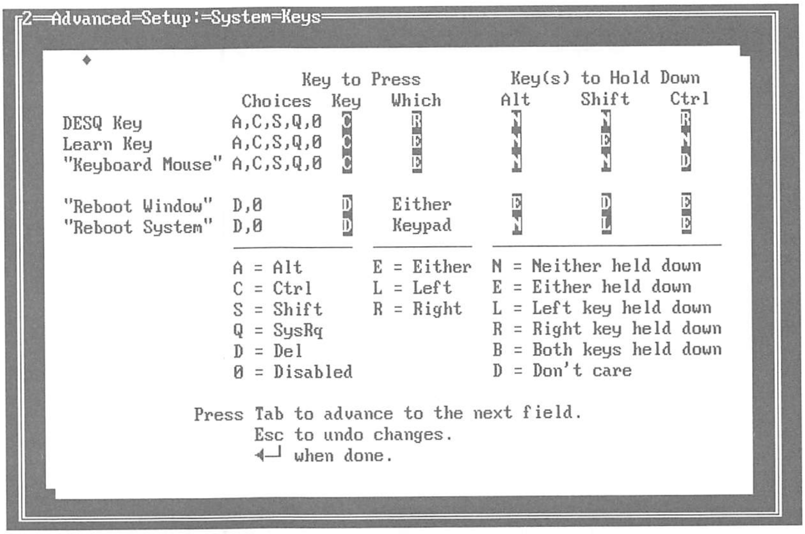
Note that the use of Alt as the DESQ key **does not conflict** with the use of Alt as a shift key—for example, as Alt-X. You have a conflict **only** if tapping Alt does not display the DESQview menu or if you are running a program that uses Alt alone or (sometimes) in an unusual combination. For example, Ctrl-Alt, as used by Sidekick, may cause such a conflict. (In this case, however, we recommend accessing Sidekick by holding down both shift keys rather than by redefining the DESQ key.)

The System Keys screen shows each system key you can change and the choices allowed for each. Below the key fields is a legend explaining the meaning of each legal entry for a field.

To change a system key, specify the key to be pressed and released and the "shift key" that is to be held down at the time you press and release this key. For example, the default setting for the Learn key specifies that the key to be pressed and released is Alt and the "shift key" is Shift. So, to "tap the Learn key" you hold down either Shift key and then press and release either Alt key.

If, for instance you wanted to change the DESQ key to be the right Ctrl key, the entries would be Key = C, Which = R for Key to Press and Alt = N, Shift = N and Ctrl = R for Key(s) to Hold Down. This resolves a conflict if you have a program which uses the Alt key by itself to bring up its own menu.

If you then wanted to change the Learn key to be either Shift key held down while either CTRL key is tapped, the entries would be Key = C, Which = E for Key to Press, Alt = N, Shift = N and Ctrl = D for Key(s) to Hold Down.



```
2=Advanced=Setup:=System=Keys

    ◆
                             Key to Press          Key(s) to Hold Down
                        Choices  Key   Which        Alt      Shift     Ctrl
DESQ Key                A,C,S,Q,0 C      R           N         N         R
Learn Key               A,C,S,Q,0 C      E           N         E         N
"Keyboard Mouse"        A,C,S,Q,0 C      E           N         N         D

"Reboot Window"         D,0       D    Either        E         D         E
"Reboot System"         D,0       D    Keypad        N         L         E
                        ___________    _________   ___________________________
                        A = Alt        E = Either  N = Neither held down
                        C = Ctrl       L = Left    E = Either held down
                        S = Shift      R = Right   L = Left key held down
                        Q = SysRq                  R = Right key held down
                        D = Del                    B = Both keys held down
                        0 = Disabled               D = Don't care

                    Press Tab to advance to the next field.
                          Esc to undo changes.
                          ◄┘ when done.
```

Advanced Setup: Mouse

The Mouse option lets you specify:

- Whether or not you want to use a mouse in DESQview.
- Whether you want to use the mouse right-handed or left-handed.

If you are not using a hardware mouse in DESQview, you can enable the keyboard mouse—see *page 200.*

Left-Handed?

If you select a left-handed mouse, the positions of the mouse buttons are reversed. **BUTTON 1** becomes the right-most button. **BUTTON 2** becomes the left-most button. If you have a three button mouse, the middle button remains the DESQ button. See the picture on *page 57*.

You cannot reverse the keyboard mouse buttons (see *page 57*).

Advanced Setup: Network

DESQview includes two network drivers that should be used if you plan to multitask programs which are making either Novell Netware IPX/SPX or NETBIOS network calls. If you are running communications programs over network gateways or if you are running programs that are designed using client/server architecture, you will need to use these drivers.

In prior versions of DESQview, DESQview did not support multitasking any program that used these network calls. If you were multitasking network programs, you may have experienced system hangs.

The DESQview driver, DVNETBIO.DVR, supports the NETBIOS interface. The DESQview driver, DVIPX.DVR, supports the Novell Netware IPX/SPX interface.

Installing Network Drivers

The Setup program of DESQview includes an entry on the Advanced Setup screen called Network. By selecting Network (N) on this screen, a Setup screen is displayed that asks you which DESQview network interface driver you want loaded, and whether or not you want your workstation to be a peer-to-peer server. You can load more than one driver.

The network drivers need to reserve a memory buffer to store data. The Advanced Setup: Network screen asks for the buffer size to handle network traffic; the default is 8K. Depending on the programs you use, you may have to increase the buffer size. If DESQview runs out of memory to store network data, your network program may give error messages or otherwise malfunction. You can also set the buffer size to 0K (zero K). DESQview will then use its own common memory to keep track of network traffic. There is a tradeoff you should consider:

- Dedicating a network buffer (in the Advanced Setup: Network screen) guarantees that there will always be a chunk of memory ready to handle network traffic. This might be important to you if you have heavy network demands and if your use of DESQview entails similarly heavy use of common memory.
- Sharing common memory with network data can be efficient, because DESQview will allocate memory to store network data when needed. At other times, that same memory is available to other DESQview operations. If you decide to use common memory for network buffering, you may have to increase the size of DESQview common memory (in Advanced Setup: Performance). If your programs generate heavy network activity, add enough memory to accommodate network data buffering. You can monitor DESQview's use of common memory by keeping DESQview's Memory Status screen visible while you run other programs.

Remember that changes to DESQview Setup do not take effect until you start DESQview again.

Some NETBIOS and IPX/SPX programs perform functions which listen to the network. Typically, these programs pass a specific address in memory to the network which the network may access at a later time. This may be the address of a buffer where the program is expecting the network to place data that has been requested, or to a subroutine that the program would like the network to call when a certain condition has been satisfied.

In a DESQview system in which no programs are running in expanded memory, these operations pose no problem. One example of such a system is a DESQview environment with only one window open; another is a DESQview environment in which all open windows fit into the memory available below 640K (conventional memory).

However, a problem can arise when DESQview is running some programs in conventional memory and some programs in expanded memory. Under these conditions, DESQview is frequently changing the expanded memory map in order to multitask.

A conflict can occur when a program makes a network call that will eventually generate a response from the network. By the time the network has retrieved the information that the program has requested, the expanded memory map may have changed many times. If the network simply shoots its data off to the address in memory that it was given, or calls what it presumes will be the program's subroutine, and the memory map has changed since it was given an address, it may overwrite a spreadsheet or a word processor in another window, or execute a random piece of code. The result of such a collision is often a crash or, if the processor is an 80386 or higher, an exception error.

The network drivers shipped with DESQview 2.4, DVIPX.DVR and DVNETBIO.DVR, solve this problem by detecting when any program running inside a DESQview window makes an IPX, SPX, or NETBIOS call. If the call is one that may result in the network responding at an unfortunate time, the driver changes the address that the program is handing to the network, passing instead an address which will never be mapped out of the 0K to 1024K memory area. When the network responds, DESQview is able to activate the program that requested the information, making sure that information and control are transferred to the appropriate addresses in memory.

Installing the Peer-to-Peer Driver

The DESQview peer-to-peer driver is called PEERSRV.DVR and will be loaded if you specify either the LANtastic or NetWare Lite option on the Network screen.

The peer-to-peer drivers let DESQview work on top of LANtastic's or NetWare Lite's server program. When your computer is set up as a server, other users on the network can access your hard drive or run programs remotely.

You do not need to use a server driver unless you are using DESQview on a system where the server is loaded. Note also that your system may slow down when other users access your workstation as a server.

The server drivers may work for network servers other than LANtastic or NetWare Lite.

If you sometimes choose not to load your network software, there is no memory penalty. DESQview senses whether the network software is present and will not load DVNETBIO.DVR and DVIPX.DVP if they are not needed. However, if you load the peer-to-peer driver, there will be a difference in performance, so only use this option if your workstation will usually be used as a server.

Advanced Setup: Performance

The Performance option lets you customize the performance characteristics of DESQview to your personal needs. You can specify:

- How DESQview allocates time to foreground and background programs.
- The amount of common DESQview memory to allocate and, if you have expanded memory, the size of the EMS DOS buffer to use.
- Whether DESQview should optimize communications programs.
- Whether DESQview should ever swap programs out of memory to free up space to run other programs.
- Whether DESQview should manage printer contention.

What Processing Time?

You can control the number of clock ticks that DESQview gives to the foreground program and to each background program. (The clock ticks 18 times a second.) In general, you should give each program a minimum of 3 ticks—2 on a 386 or higher PC. On very fast machines, 1 tick can be successfully specified.

DESQview allocates time to each program in round-robin fashion. First, the foreground program is given the number of foreground ticks indicated. Then, each background program is given, in turn, the number of background ticks indicated. If a program is waiting for keyboard input, and there is none, DESQview skips this program.

The correct settings for these tick counts depend on what you do in foreground and in background. If you work mostly in foreground, and only occasionally run programs concurrently in background, the default setting of 6 foreground ticks and 2 background ticks is probably correct. If you do light work in foreground—word processing, entering information in data base records, constructing spreadsheets (with few recalculations or automatic recalculation turned off)—and heavy background processing—sorting databases, downloading from mainframes, recalculating large spreadsheets, checking long documents for spelling errors, and so forth—you may want to change these settings to increase the time allocated to the background.

The way to determine the optimum settings is by trial and error. In addition to allocating default clock ticks here in the Setup program you can also dynamically set these values from the DESQview Tune Performance menu. Change the settings to the new values you think are appropriate and run the combination of programs you are working with. Do not give extreme values to either count. For example, if you set foreground to 3 ticks and background to 50 ticks, the foreground program will virtually grind to a halt. Also, with too high a setting for the foreground program, some background tasks could conceivably time out.

What Memory Usage?

When you start up DESQview, it allocates space for common DESQview memory, for an EMS DOS file buffer (if required), and for the script buffers described in the ***What Buffer Sizes?*** section on ***page 199***.

- **Common Memory** (initially, 20K) is the area of memory DESQview uses:

  To store the information DESQview needs to manage windows.

  To store the Open Window menu (the contents of the file, **DESQVIEW.DVO**—see **Appendix G**).

  To store the information marked with the Mark command.

20K (the minimum allowable) is sufficient for DESQview to keep track of about seven windows and still have room for a full (25x80) screen's worth of Mark information. If you get the message **Not enough common memory** when trying to open a window, increase the Common Memory area size.

- **DOS Buffer for EMS** (initially, 2K) is meaningful only if you have expanded (EMS or EEMS) memory or are running on a 386 PC and have loaded QEMM—see ***SWAP Drive, page 208***, in this appendix for more about this. This buffer is used to manage file operations into expanded memory and may affect the performance of your system. If programs storing data in EMS memory, or running in EEMS memory, seem to be slow at performing DOS file operations, increase the DOS buffer size. There is little value in increasing the size above 30K.

Optimize Communications?

If you are running high speed communications programs in DESQview, you normally want DESQview to optimize its handling of these programs. However, DESQview's optimization technique may cause a few PC-compatibles to hang (freeze). If DESQview hangs at startup, turn this option OFF. This may reduce your ability to run communications at very high speed—9600 baud or greater.

Manage Printer Contention?

One of the most common uses of background processing is printing. If you have several programs which simultaneously want to print in background or in foreground, you normally manage this yourself by not starting to print in one program until the other one is finished. If you want, you can tell DESQview to manage this problem for you. When you do, DESQview suspends any program that tries to use the printer if another program is already printing. If DESQview manages printer contention, it will send a form feed at the beginning of each print job.

CTTY Support

CTTY support is enabled by setting Manage printer contention to Y (ON). CTTY support is disabled when Manage printer contention is turned off (set to N).

Advanced Setup: Swapping

When DESQview needs more memory than is available to run a program, it frees up memory by swapping out a background program. The Advanced Options: Swapping screen lets you disable swapping, or, if swapping is enabled as it is by default, to specify a drive and directory where DESQview stores swap files when no expanded memory is available.

Allow Swapping?

The first question asked on the Swapping screen is **Should DESQview swap programs into and out of memory as needed?** (Y/N)

Normally, swapping is a desirable feature. Sometimes, however, you may want to completely disable this feature—most commonly on floppy-based systems without expanded memory. To disable, enter **N** in this field.

Swapping Directory

The SWAP directory has a special use in DESQview:

- It specifies the drive and directory to which DESQview should swap out programs when it needs memory to start up another program—or when you explicitly tell DESQview to swap out a program using the Put Aside command.
- It specifies the drive and directory to which DESQview should save graphics screens when there is not enough memory available to save them in memory.

We refer to the information that a program writes to the standard (25x80, 30x80, and so forth) area of your video display as a **screen.** When you switch away from a program, its screen is saved so that it can be restored when you switch back. Text screens are always saved in memory. Graphics screens, however, are often too large to save in memory—up to 256K in certain EGA and VGA modes. So, graphics screens are normally saved in expanded memory or on disk (see ***pages 182-183***).

The correct value to enter in the Swapping directory field depends on your hardware configuration:

- **386 PC.** If you have a Personal System/2 Model 80 , 386 or i486 PC, and have loaded Quarterdeck Expanded Memory Manager (QEMM), leave the SWAP drive field **empty**. This tells DESQview to swap to 386 extended memory (above 1MB)—an almost instantaneous operation.
- **Expanded Memory.** If you have a PC, PC-XT, PC-AT, or Personal System/2 with an expanded memory (EMS 3.2 or EMS 4) board or an enhanced expanded memory (EEMS) board installed on your system, leave the SWAP drive field **empty**. This tells DESQview to swap out to EMS or EEMS memory—a very high-speed, almost instantaneous, operation.

- ☐ **No expanded Memory:**

  PC or **PC-XT**. If you have a PC or PC-XT without extra memory (above 640K) for a RAM disk, you can either enter a drive and directory in the SWAP field or leave it empty. If you enter a drive and directory, DESQview performs all swapping to where you specify. If you leave the SWAP drive empty, DESQview will swap to the drive and directory from which you started up DESQview (most commonly, **C:\DV**).

  PC-AT. If you have a PC-AT with extended memory above 1MB but with no EMS or EEMS memory, we recommend that you allocate part of the memory above 1MB to a RAM disk (using VDISK or an equivalent driver) and then enter the letter of that RAM disk in the SWAP drive field. Swapping to RAM disk is nearly as fast as swapping to EMS or EEMS memory.

  386 PC. If you have a 386 or i486 PC with no EMS driver, we recommend† that you allocate part of your 386 extended memory (above 1MB) to a RAM disk (using VDISK or an equivalent driver) and then enter the letter of that RAM disk in the SWAP field. Swapping to RAM disk is nearly as fast as swapping to extended memory using an EMS driver.

When you assign the SWAP drive to a RAM disk or expanded memory, DESQview automatically reverts to swapping to your hard disk if you run out of RAM disk space or expanded memory space—storing programs on the drive and directory from which you started up DESQview (most commonly,**C:\DV**).

---

† We also recommend that you see the notes on installing DESQview at the end of **Chapter 1** (or consult your dealer or Quarterdeck) for information on why you should consider getting Quarterdeck Expanded Memory Manager (QEMM) to take full advantage of the power of your 386 PC, if you do not already have it.

Advanced Setup: Video

The Video option lets you specify:

- ❑ What type of display adapter board is installed on your system.
- ❑ Whether you want DESQview to allow text and graphics to be displayed on the screen at the same time.
- ❑ Whether your display hardware requires synchronization.
- ❑ Whether you want DESQview to blank the screen after a certain time.

What Display Adapter?

This option indicates the type of DESQview display adapter board installed on your system: **Monochrome, Color Graphics (CGA), Hercules** (or compatible), **Enhanced Graphics (EGA/VGA)**, or **Other**. DESQview provides a graphics driver **(GRFxxxx.DVR)**, which is loaded automatically when you start up DESQview. If you select **Other,** you can supply another DESQview driver by entering its name in **Current Graphics Driver.**

Display Text and Graphics?

If you run graphics programs, you can control whether you want DESQview to switch back to text mode, or remain in graphics mode, when you switch from a graphics program to a text program:

- ❑ **Y** specifies that, when graphics and text are both displayed on the screen at the same time, the text information should be displayed in graphics mode. The advantage is, you can leave graphics information on the screen while you work in a text program in a small window.

  It has the disadvantage that programs running in text mode will generally run slower when displaying information in graphics mode. Also, the colors used in graphics windows—called the **palette**—may change. (They are restored when you switch back to the graphics window.)

- ❑ **N** specifies that, when you switch from a graphics program to a text program, the graphics information should be hidden by the **graphics curtain**. (Some EGA and VGA modes force the curtain even when this option is ON.)

*NOTE: If you have Display Text and Graphics set to N, you cannot switch to **50 line mode** if your program is set up with "Writes text directly to screen" set to Y (ON) in the program's DVP (see* **Chapter 7:** ***Changing a Program's Information****).*

Synchronize?

Some monitors require the software to provide synchronization during video trace. If you get snow, your monitor requires synchronization.

Screen Blanking?

You can tell DESQview to blank your screen when you leave your PC idle for a given number of minutes. This **screen saver** feature helps prevent burn-in. To restore your screen after it has been blanked, tap any key—we recommend the Shift key.

Advanced Setup: Window Positions

The Window Positions option lets you specify the nine predefined window positions used by DESQview when it opens a window and when you use the Position command on the Rearrange menu (see *page 78*).

When you open a window, DESQview uses the position information you specified on the Change a Program menu for that window to determine its size and position on the screen (see *page 186*).

However, if you have not specified a position, DESQview uses one of its nine predesignated positions for the window, in round-robin fashion. To change any of the nine default positions, enter the new positions you want:

- **Row** and **Column** specify the position of the top-left corner of the window, excluding the frame (if any).
- **Height** and **Width** specify the height and width of the window, excluding the frame (if any).

The top-left corner of the screen is 0,0. Your position settings must specify a full-screen window or a window small enough for a frame to be drawn on all four sides:

- A **full-screen window** must start at 0,0. For example, the standard 25x80 full-screen window is 25,80,0,0 .
- A **small window** must start at 1,1 or greater, and have a height and width that allow room for a frame. On a 25x80 screen, the largest "small" window is therefore 23,78,1,1.

Programs written expressly for DESQview may create multiple windows, override the window position settings you specify, or create windows without frames. When a program has multiple windows, the Window Position settings apply to the main (task) window. If the main window is a small window, but has no frame, it may be positioned at 0,0.

Notes:

B

DESQview and Memory

DESQview is a multitasking operating environment. Most of you know that DOS was not built to be a multitasking operating system, so DESQview makes clever use of DOS and the hardware on your computer system to actually accomplish that multitasking for you. How clever DESQview can be depends on what model of computer you have and how much of what kind of memory you have on your computer.

About This Appendix

Below is a table of contents for this appendix. The purpose of the first section is to present general concepts of PC memory in the context of multitasking in DESQview. The section on 286 and lesser processors is more detailed on these issues because if you are running an 80286, 8086 or 8088 computer you may need to understand more about the capabilities of your hardware to get the most out of DESQview. That section explains how to maximize the potential of those machines. The final three sections are intended to familiarize users with the features of DESQview that can assist in analyzing and improving memory usage on your particular system.

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Multitasking in 640K of Memory

Using the most basic example, DESQview multitasks in conventional memory on any computer. All computers have conventional memory. Most computers come equipped with 640K of conventional memory. Without any memory beyond 640K, DESQview multitasks in the amount of conventional memory left over after DOS, any drivers and TSRs indicated by your CONFIG.SYS or AUTOEXEC.BAT and DESQview are loaded. Within that memory, DESQview keeps each program out of the other's way and you can switch between programs quickly because they are each in memory. For example, if you have 436K of memory available after DOS, drivers and DESQview are loaded, you can run two 200K programs, such as a communications program and a text editor, downloading in background while you prepare a document or use DOS in foreground. Or, if you typically run even smaller applications, 436K would be enough to run four 100K programs. (DESQview's overhead for each application is about 9K per window.)

Multitasking in 1MB (1024K) of Memory

The concept of multitasking in 1024K (1 Megabyte) introduces the idea of using a memory manager to move drivers and TSRs out of the way to increase the size of the conventional memory area in which DOS and DESQview can run programs. If you have a total of 1MB of memory, the first 640K is memory in which programs can run. The other 384K is either extended memory or Shadow RAM.

The memory addresses between 640K and 1024K are known as the upper memory area or reserved memory. This range of addresses is typically used for special system functions such as the ROM BIOS and your system's video, so normally these addresses are occupied by devices (such as video cards, ROMs and network adapters). Some of these memory addresses are unused.

Unused memory addresses are not the same as memory. Unused addresses are like mailboxes that can be filled with information. When they are filled with information they are Memory or RAM (RAM stands for Random Access Memory). They can also be filled with ROM (Read-Only-Memory) from expansion cards and peripherals like a video card or a disk controller. When they are not filled, they are empty addresses available to have RAM put in them.

Sometimes we see the addresses between 640K and 1024K referred to as extended memory. These addresses are **never** extended memory. Extended memory starts above 1024K. This confusion exists because on some 286s the extra 384K is actually extended memory (it starts above 1024K). This is limiting for DOS and for DESQview because extended memory can not be used for High RAM. It can only be used for the HMA (see below), a virtual disk, disk cache or another protected mode utility or application.

The other (and more useful) case is where the additional 384K is Shadow RAM (it **is** between 640K and 1024K, it is just not active). If it is Shadow RAM, it is possible for a memory manager (for example, QEMM or QRAM) to use some of this area to create High RAM, which is where drivers and TSRs are loaded when the memory manager puts them out of the way.

If you have addresses between 640K and 1024K, you can use a memory manager (QEMM for 386s or QRAM or QEMM 50/60 for 286s) to place your drivers and most of DESQview in unused addresses in the upper memory area, making more room in the lower 640K to run programs. Quarterdeck calls this **creating High RAM**. Creating High RAM and using that High RAM for code or data that would normally run or be stored below 640K can make considerably more conventional memory available for running and multitasking larger and more programs under DESQview. High RAM can only be created on a computer with 1MB or more of memory, that has usable memory addresses available between 640K and 1024K.

Extended Memory

Extended memory is memory that is installed on your computer above 1024K. DOS is a Real Mode operating system and knows nothing of extended memory, which can only be used in protected mode. Extended memory can be used for disk caches, print spoolers, RAM disks and DOS Extended programs (which run in protected mode). Regular DOS programs, however, cannot run in extended memory. DESQview runs regular DOS programs in conventional memory or expanded memory (which is different from extended memory), if it can find expanded memory on your system.

DOS Extended Programs

DOS Extended programs such as Lotus 1-2-3 Rel. 3 can run themselves in extended memory (using very little conventional memory). These programs use extended memory for their data and code most of the time, however they must go into conventional memory (real mode) to talk to DOS or the BIOS (for instance, reading and writing files to disk). While in extended memory (protected mode), DOS and the DOS Extended program are oblivious to one another. When a DOS function is required, only the conventional memory part of the DOS Extended Program using DOS is visible to DOS.

DOS Extended programs run in DESQview just as you would run them from DOS. You need to allocate enough extended memory in the DVP by specifying Maximum EMS/XMS/VCPI/DPMI (in K) for the program. (This field regulates either expanded or extended memory, whichever the program requires.) You should always have a value in this field because many DOS Extended programs grab all the extended memory they can find. If that happens, you might not have enough memory to open another DESQview window after you run the DOS Extended program. DESQview multitasks multiple DOS Extended programs, keeping each program's use of extended memory separate from the others'.

The HMA

There is a special 64K area of extended memory starting at 1024k called the HMA, which stands for the High Memory Area. It is special because unlike the rest of extended memory, this area is accessable in real mode. This is an area of memory where DESQview (or another program that knows how to use the HMA) can load 64K of itself. If the HMA is free for DESQview to use, you have even more room for application programs in the lower 640K. You can also load DOS 5 or 6 into the HMA however, we suggest you read **Appendix M, *Using DESQview With DOS 5 or 6,*** because sometimes it is better to let DESQview, rather than DOS have the HMA.

Do not confuse the upper memory area (High RAM) with the HMA. Upper memory (or High RAM) is defined as the usable (or used) memory addresses between 640K and 1024K. The HMA is a special 64K piece of extended memory that DOS can access **starting** at 1024K.

To access the HMA on a 286 computer, a special driver, QEXT.SYS is needed. Installing DESQview automatically places QEXT.SYS in your CONFIG.SYS file (if Install finds extended memory on your computer). Once in your CONFIG.SYS file, QEXT.SYS is loaded each time you boot your computer. If Install finds HIMEM.SYS in your CONFIG.SYS, it replaces HIMEM.SYS with QEXT.SYS. QEXT.SYS provides services equivalent to HIMEM.SYS plus some additional services for DESQview. On a 386 or better processor, QEMM makes the HMA accessible and you do not have to load QEXT.SYS.

DESQview cannot multitask in extended memory. For multitasking, DESQview needs conventional and expanded memory.

Expanded Memory

DESQview can multitask in expanded memory, meaning all programs can be run in memory concurrently, up to the amount of memory installed. On a 386 computer the memory management necessary to accomplish multitasking happens automatically in the presence of enough memory if QEMM is loaded, because QEMM converts extended memory to expanded memory. DESQview also gives any program that uses extended memory the extended memory it needs and keeps each program's use of extended memory from interfering with any other program's use of extended memory.

On a 286 or lesser processor you may have to research just which EMS features your hardware supports, and configure your hardware to optimize the degree of multitasking DESQview can accomplish (See *page 219*.)

In the current era of large programs, you are not likely to get more than one or two regular DOS programs in conventional memory simultaneously. Normal business applications often use more than 400K of memory alone. If you do not have expanded memory that DESQview can use for running programs, when your first DESQview window does not leave enough memory available to open a second program, DESQview swaps the first program out to make room. When you switch back to the first program, it is swapped back into memory and the second program swapped out. When a program is swapped out, it is suspended. When you switch back to a swapped out program, it starts running right where you left off.

The amount of time it takes to swap one program out and another program in is highly variable. If you are swapping to a hard disk, the time depends on the size of your program and the speed of your hard disk. Hard disk times vary enormously. A fast disk may swap three or four times faster than a normal disk. Swapping to a RAM disk is faster. The fastest method is swapping to expanded memory. It is virtually instantaneous.

Even on minimally endowed computers, swapping in DESQview has a lot to offer. Besides not having to close one program to open another, you have the DESQview features of Mark & Transfer, Scripts, the Auto Dialer and DOS Services, plus an easy-to-use menu driven interface for starting programs and running them in windows.

However, swapping is not true multitasking. True multitasking is running as many programs as you wish **in memory** simultaneously. When you switch between programs that are multitasked, the program in the window you switch away from continues to run in background (if you want it to) and the switching is very fast because it occurs at processor speed. You get true multitasking from DESQview if your computer has enough of the right kind of memory installed, because DESQview can keep as many programs running as can fit in the memory it can find on your computer.

How Much Memory do You Have

One way to determine how much memory your computer has is to watch the memory count-up that appears on your screen shortly after you turn the power on. Most computers report Conventional Memory first (sometimes referred to as base memory) and count up any additional memory installed on your computer immediately after.

What Kind of Memory

What is the right kind of memory to multitask in DESQview? That depends on your computer and, if you do not have a 386 computer, the capabilities of your motherboard and your add-on memory board.

DESQview 386 and Multitasking

On a 386 computer (a 386SX, i486, etc.—all 386 and higher chips contain the same multitasking features) all the memory is usually conventional and extended memory. It does not matter whether this memory is on the motherboard of the computer or on an add-on card. It is the 80386 processor that allows this memory to be managed by QEMM and converted into expanded memory that DESQview 386 can use for multitasking your programs. The only thing you need to do to allow DESQview 386 to access as much as 128 MB of memory in your system is have that memory installed. DESQview 386 is then able to multitask as many programs as fit into conventional and expanded memory combined.

It is important that you leave your 386's memory in its native state: extended. You should NOT configure any of that memory with jumpers or switches or software to be expanded memory. If you do, it limits the amount of memory that QEMM can make available for DESQview and for your programs inside of DESQview. QEMM and DESQview automatically detect the memory in your system and make the optimal use of it. Memory is allocated to DESQview and to each program you run in a DESQview window exactly as the program (and the DVP) require. More specifically, the DVP regulates the **amount** of memory the program gets in DESQview (see **Chapter 7**), and QEMM makes sure the program gets the **type** of memory (expanded or extended) it requires.

DESQview 386 consists of DESQview and QEMM working together. To get the best use of your computer's memory, install DESQview 386 and let the install program run QEMM's OPTIMIZE program. This automatically configures your memory to run your programs in and out of DESQview in the optimal amount of memory. After you run OPTIMIZE, you are done. Type DV to start DESQview and start multitasking. You need not research memory issues further unless you are interested in the technical details or you are supporting computers other than 386s.

If you wish more information on the history and inner workings of different memory specifications, refer to your Manifest manual for an extensive discussion of each memory type. Quarterdeck Manifest is a system analysis program included with DESQview and DESQview 386 which can show you and teach you everything about the memory as well as other resources installed on any computer.

If you add a driver or TSR to your 386 at any time, just run OPTIMIZE again at any point to reorganize your memory between 640K and 1024K. If you add more memory, you do not have to run OPTIMIZE again because DESQview 386 automatically detects and uses as much memory as it finds each time you start it.

Multitasking on a 286 or Lesser Processor

Memory management is a somewhat more complex subject on a 286 or lesser processor. That is because of the limitation of these earlier processors as compared to a 386. While 286 computers have real and protected mode, only a 386 or higher has virtual 8086 mode. In virtual 8086 mode, multiple real mode programs can be running at the same time, each in their own address space.

On a 286 or lesser machine, the type of memory you add on to your computer critically affects the degree to which DESQview can provide multitasking. DESQview needs expanded memory for multitasking beyond 640K. An add-on board capable of providing expanded memory is called an Expanded memory board, not an Extended memory board. For DESQview to multitask beyond 640K, you need an expanded memory board. All expanded memory boards on the market comply with at least one of the three expanded memory specifications. DESQview maximizes the capabilities of each. The three specifications are:

- ☐ Expanded memory that follows the Lotus/Intel/Microsoft Expanded Memory Specification Version 3.2. This is usually abbreviated as **EMS3.2 memory, LIM memory**, or sometimes **LIM-EMS3.2 memory**. EMS3 is a completely compatible subset of EMS4.0.

  EMS3.2 boards can only map 64K of memory at one time. Because this is not enough to run most DOS programs, EMS3 memory is used by DESQview as a data storage area. Programs written to use expanded memory, such as Lotus 1-2-3 Rel. 2 can store data in EMS3.2 , for instance and DESQview can use EMS3.2 memory as swapping space. Swapping to EMS is considerably faster than swapping to disk. DESQview automatically uses EMS3 for swapping, unless you have specified a RAM disk (or fixed disk) as your swap space in DESQview Setup. While EMS3.2 cannot be used for multitasking it can enable lightning fast task switching.

- ☐ Expanded memory that follows the Lotus/Intel/Microsoft Expanded Memory Specification Version 4. This is usually abbreviated as **EMS memory, EMS4 memory, LIM4 memory,** or sometimes **LIM-EMS4 memory.**

- ☐ Expanded memory that follows the AST/Quadram/Ashton-Tate Enhanced Expanded Memory Specification. This is usually abbreviated as **EEMS memory** or sometimes **enhanced-EMS memory**.

  If the EMS4 or EEMS board is capable of mapping below 640K, DESQview can multitask in as much of this memory as can be disabled from the motherboard and backfilled from the memory card (see *page 221*). Mapping more than 64K is an optimal feature of EMS4 or EEMS boards, however not all boards support this feature. If the memory board can map more than 64K you can have larger DESQview windows. If you are installing an expanded memory board that you want DESQview to multitask with, make sure it can map below 640K.

Mapping below 640K is essential if you want to multitask in expanded memory. Be certain also that your existing hardware and the driver for the memory board meet the requirements listed on ***page 221.***

Note that memory boards which were originally designed for EMS3 can have an EMS4 driver written for them, but they do not gain all of the new features of EMS4 because they lack the necessary hardware to perform the advanced functions. The most important feature (to DESQview) is the ability to map **more** than 64K of memory at one time. EEMS memory boards can become EMS4 memory boards by obtaining an EMS4 software driver from the manufacturer, because the extra hardware necessary for the advanced functions is built into EEMS boards. Almost all references to EMS4 in this manual apply to EEMS as well.

286 Memory Management Units

You can get expanded memory that DESQview can use for multitasking by using a 286 memory management unit such as the AllCharge Card or the SOTA Pop card. These units enhance your 286 processor and can map below 640K.

You can also get a 386 CPU to upgrade your 286 to a 386, in which case you do not need to do any further configuration of your memory for DESQview. If you upgrade your 286 to a 386 and install QEMM you are then running DESQview 386 at full capability.

Memory Incompatible with DESQview

DESQview is **not** compatible with expanded memory emulators on 286 PCs which convert extended memory or disk space into expanded memory without additional hardware. These programs use significant amounts of memory below 640K and are not fast enough to perform effectively with DESQview.

Summary

The DESQview capabilities available to 286 and lesser computers are directly related to the amount and type of expanded memory you have. DESQview uses each type to its fullest potential and automatically detects its presence, as long as you have loaded an expanded memory manager when you booted your system. DESQview can multitask on any PC, regardless of the types of memory available.

Multitasking is limited to what can fit in conventional memory unless there is an expanded memory board that can map into conventional memory, in which case programs as large as the conventional memory mapping area can be run concurrently. The number of programs that can be run concurrently depends on how much expanded memory is available to keep multiple programs in memory. When expanded memory runs out, DESQview swaps the least recently used program to disk. DESQview can also swap to a RAM disk if you have one set up and you have indicated the RAM disk's drive designation in the Swapping section of DESQview Advanced Setup (see **Appendix A**).

(If you have EMS3, do not swap to a RAM disk; EMS3 is faster, assuming you have enough memory space for swapping.)

If you have Quarterdeck's Manifest program, you can determine what kind of memory you have, how it is configured and how DESQview and other programs can use it.

Backfilling to Optimize the Memory You Have

For DESQview to be able to multitask in expanded memory on a 286 or lesser processor, two factors must be present:

- ❏ You must be able to disable a substantial amount of motherboard memory. By substantial amount we mean enough memory to run the second largest DOS program you need to run under DESQview. The first program runs in conventional memory. The rest of the programs you open, however, need to be able to run in the amount of memory equal to the amount you have backfilled, minus DESQview's overhead.

  Very few motherboards can be disabled down to 0, which would be ideal. Some motherboards can be disabled down to 128K or 256K, which gives you enough room to backfill 512K or 384K respectively. These amounts work with all but the very largest regular DOS programs. Always start your largest DOS program in the first DESQview window you open, which on a backfilled system, is always the largest window.

- ❏ The expanded memory board and the driver that manages the memory on the board must be able to map a corresponding amount of memory below 640K (to equal the amount of memory you can disable on your motherboard).

How to Backfill

Given the above two capabilities of your hardware, you need to do the following:

- **Disable your motherboard memory to the minimum it will support. Your computer's documentation will tell you how to do this (if it is possible on that particular motherboard).**

- **Set your EMS board's switches to start memory at the address that your motherboard's memory now ends. This is called backfilling.**

  What you have done is filled the disabled area of memory on the motherboard with smarter EMS memory that DESQview can use for multitasking your programs on 286 or lesser processors.

Creating an HMA

Most expanded memory boards can be configured so that all or part of the memory is expanded or extended. If you can designate the first 64K of memory starting at 1024 as extended, you create an HMA where DESQview can load part of itself on a 286 or lesser processor. Having done this, you should also be sure QEXT.SYS (see ***page 216***) is loaded so DESQview has access to the HMA you created.

What is Mapping?

The term mapping is used above to qualify the EMS features of memory boards. Mapping is a trick of substituting one address in memory for another. On a 286 processor DESQview uses the mapping capability of your memory board to show the processor each multitasked program in turn in an area of memory where DOS expects programs to be run. DESQview cycles each program in and out of the lower 640K addresses in turn by mapping the information in and out of the appropriate addresses. That is why the amount of memory that can be mapped below 640K by your memory board is a critical factor in determining how efficiently DESQview can multitask your programs on 286 or lesser processors. On a 386 or better machine, most of this work is done by the processor itself, so the mapping features of a memory board are irrelevant.

Strategies for Low Memory Situations

The largest DESQview window you can open is determined by the amount of conventional memory left after DOS, DESQview and any resident programs and drivers have been loaded. It is not affected by the total amount of memory you have installed above 1024K. The total amount of memory (beyond what the first window needs) in your system affects **how many** windows you can have open.

To increase the size of a window where a few kilobytes of memory would make the difference between whether or not a program runs in a window:

- ☐ Remove TSRs from your AUTOEXEC.BAT, if you can, and load such programs in their own DESQview window or in the window of an application that needs it.
- ☐ Remove any drivers from your CONFIG.SYS file that you do not actually need.
- ☐ If you are using QEMM, perform the ANALYSIS procedure as documented in your QEMM manual, to see if there are any memory addresses between 640K and 1024K that you can INCLUDE. If you are using QEMM version 6 or later, using STEALTH diminishes the need to use ANALYZE. In either event, run OPTIMIZE as well.
- ☐ Run DESQview Setup and experiment with paring down the following values, which affect memory usage:

  Advanced Setup/Performance: Common Memory is memory used by DESQview to manage its windows, and the amount you need is usually proportionate to the number of windows you typically open. The default value is 17K; the minimum value of 14K is adequate for users who open no more than five or six windows at once. Few users need more than 20K of common memory.

  Advanced Setup/Performance: **DOS Buffers for EMS** is memory used by DESQview to manage file operations into expanded memory. The default value is 2K; users of QEMM who are not on a network can set this figure to 0 (zero) with a memory savings of about 5K.

  If you are not using graphics on your system, you can save another 2-16K by choosing 0 for **What Display Adapter do you have?** on the **Advanced Setup: Video Monitor** screen. With a value of zero (for monochrome), DESQview does not load a video driver. Without a video driver, DESQview will not save or restore graphics screens completely and you cannot virtualize graphics to run the program in a small window. However, you can use graphics without a DESQview video driver if you run the graphics program in a direct window (no virtualizing) and if the program has a command that lets you redraw the screen in case DESQview does not restore it completely under these circumstances.

On the **Advanced Setup: Network** screen, you may disable the network support, or decrease the size of the buffer. This support is needed only for certain network-specific programs, not most normal DOS applications that are merely run off the network. The amount of memory saved is about 5K plus the size of the buffer reserved. Unless you know that you need this service, you should try running without it. Also try decreasing the size of the buffer. The default is 8K.

You can also use Setup to disable DESQview's Learn (keystroke macro) feature, which saves 12K, if you can live without Learn.

☐ Investigate using DESQview Companions. This is a suite of four utilities; a Wordstar® command–compatible text editor, a calculator, a calendar/diary and a telecommunications program that together use less than 200K of memory. The DESQview Companions are sold separately by Quarterdeck Office Systems.

DESQview's Overhead

An understanding of how DESQview can load itself out of the way and how the overhead for each window is accumulated can help you find more memory for your programs to run.

How and Where DESQview Loads Itself in Memory

DESQview works very hard to conserve memory by finding out-of-the-way places to load its code and data, leaving more room below 640K for your programs.

DESQview can load its code in non-contiguous chunks of High RAM or mappable areas between 640K and 1024K. If no High RAM or mappable areas between 640K and 1024K are possible, DESQview must load all of itself into Conventional Memory. DESQview needs between 154K and 182K—approximately, depending on the setup configuration and the hardware on which it is running. You may be able to reduce the 154K figure by using some of the techniques on ***page* 223**.

If you have High RAM or mappable areas between 640K and 1024K, DESQview can load most of its code there, and in the HMA. At optimum, less than 3K of DESQview code is in Conventional Memory.

DESQview can place 64K of its code in the HMA, if you have 64K of extended memory starting at 1024K (see ***page 215***).

An EMS Page Frame is a 64K area of addresses where programs that use EMS can map four 16K pages of memory. The address of the page frame is determined by a memory manager and the memory manager also manages the flow of information through the page frame. DESQview can place 32K of its code, (slightly more on a VGA system) in the EMS Page Frame, if your computer has expanded memory of any kind. The DESQview code is switched out of the way when a program uses the Page Frame to page data in and out of memory.

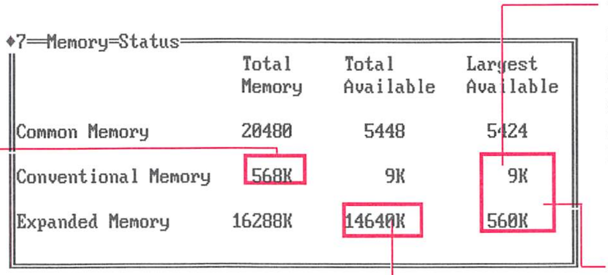
Memory for DESQview Windows

DESQview's overhead for programs is generally about 9K per window. If you have program script buffers above 1K, add the size over 1K. If your program uses EGA or VGA text modes that display more than 25 lines, add the numbers in the table on ***page 181***, less 4K (which is already included in the 9K value).

The Memory Status Program

The Memory Status program is included on your DESQview diskette. You can find it on the Open Window menu. Memory Status dynamically displays the current memory usage of your running system at any given moment.

When you run Memory Status, the following window appears:



```
♦7═Memory═Status═══════════════════════════════════════════
                         Total       Total        Largest
                         Memory      Available    Available

Common Memory            20480       5448         5424

Conventional Memory      568K        9K           9K

Expanded Memory          16288K      14640K       560K
```

The larger of these two numbers is the largest program you can run at the current time without swapping a program to disk (less about 9K for DESQview's overhead).

This number will always be 0K (zero) if you do not have expanded memory or if you only have an EMS3 board installed on your system. It is only nonzero on a 286 or lesser processor if you have EMS4 memory and have "disconnected" motherboard memory and backfilled it with memory from the EMS4 board.

The total amount of memory available to run programs. Most of this memory is in the 0K-640K area. On PCs with EMS4 memory and 386 PCs with QEMM, this value also reflects areas of memory above 640K.

The expanded memory that's currently available to store data—and to run programs if you have EMS4 memory.

The rows list the three memory areas of interest:

- **Common Memory** refers to the amount of memory in DESQview's Common Memory Buffer (see **Appendix A**). The values it shows are in bytes, not K. Generally, you can ignore these values. If **Largest Available** drops below 1,000 bytes, you might want to allocate more common memory by running the Setup program and adding another 2K to the table.
- **Conventional Memory** refers to the memory available to you for running programs in the 0K-640K memory area of a PC. It consists of motherboard memory, add-on memory, and expanded memory used to fill out your system to 640K. On PCs with EMS4 or EEMS memory and 386 PCs with QEMM, this may include areas of memory above 640K that DESQview uses to run programs.
- **Expanded Memory** refers to the memory supplied by expanded memory boards. It excludes expanded memory used to fill out the 0-640K area and expanded memory that was allocated to RAM disks, print spoolers or disk caches when you booted your system or before you started up DESQview.

The columns list the current sizes of each of these memory areas:

- **Total Memory** is the total memory available on your system for the given memory category. This value is fixed at the time you start DESQview and depends on your hardware and memory configuration and on the device drivers, memory-resident programs, and disk buffers you loaded when you booted your system or before you started DESQview.
- **Total Available** is the total memory available at the current moment in the given memory category. This may consist of pieces of fragmented memory and thus does not necessarily reflect the contiguous memory needed to run a program.
- **Largest Available** is the largest area of contiguous memory in which DESQview can run a program at the current moment . You must subtract the 9K DESQview overhead from the **Conventional Memory** and **Expanded Memory** values.

The most important numbers are:

- **Largest Available Conventional Memory** (middle right), which gives the size of the largest program that can be loaded at the current moment without swapping other programs or running the program in EMS4 or EEMS memory.
- **Largest Available Expanded Memory** (bottom right), which gives the size of the largest amount of expanded memory below 640K that a program can be run in at the current moment. **This number is always 0K (zero K) if you do not have expanded memory, or (on a 286 or lesser configuration) if you have not backfilled conventional memory with expanded memory, or** ***if you only have an EMS3 board installed on your system.***

These numbers tell you:

- The largest program (less about 9K) that you can run at the current moment without swapping a program to disk. This is the larger of **Largest Available Conventional Memory** and **Largest Available Expanded Memory.**

When you use Change A Program to change a program's size, the number you enter for Memory Size (in K) should not include DESQview's overhead. So, when you specify a minimum memory size, always subtract the 9K from numbers given by Memory Status.

The Memory Status program itself is small—about 7K, including DESQview overhead. It runs in background and therefore dynamically reflects changes in memory usage on your system as they occur.

Notes:

C

Using DESQview with a Network

DESQview can be used with most networks. See **Appendix A**, ***Advanced Setup:Network*** for information on installing DESQview's network drivers.

The following guidelines suggest how to deal with the four major issues of network usage:

- What the legal ramifications are of using DESQview on a network.
- How DESQview should be installed on a network.
- How to set up DESQview on a LANtastic or NetWare Lite server.
- How to optimize the use of DESQview on a network.

You must load your network before you start DESQview. You should also log on to the network before you start DESQview.

Avoid running NetWare LOGIN, LOGOUT and MAP commands in a DESQview window. These commands change your drive mapping which can hang running programs accessing files according to the drive map that was current when the programs started. If you do change drive mapping, be aware that the new drive map is global, that is, visible to each and every DESQview window.

Legal Considerations

Your license agreement specifically prohibits you from assigning or transferring DESQview to any other person. You are bound by the terms of this license agreement when you use DESQview on a network. Each and every individual user of DESQview on any network must have purchased (or otherwise legally acquired) a copy of DESQview and must have a DESQview manual.

The contents of this appendix shall not be construed in any way as modifying, qualifying, or otherwise abrogating the license agreement printed on the inside front cover of this manual, nor shall this appendix be construed in any way as limiting, restricting, qualifying, or otherwise altering Quarterdeck's legal rights and remedies under this license agreement.

Installing DESQview on a Network

DESQview can be installed on a network in several ways:

- The simplest method is for each individual user to install and run DESQview off their own system's local hard disk, accessing the network in the usual way.
- Another way is for each individual user to install and run DESQview from their private area on a shared disk.
- A third way is to place most of DESQview in the public area of a shared disk and place only those files which should never be shared in a private area.

If you use either of the first two methods, your copy of DESQview is not shared with other users. If you use the third method, where DESQview is shared, you need to have a private area for the files which must not be shared.

When DESQview needs memory, it swaps programs to your hard disk, to RAM disk, or to expanded memory—depending on how you have set up the **SWAP drive** field of the Swapping setup option. On a non-network system, the SWAP drive is usually set to expanded memory, to a RAM disk, or to the drive and directory from which you start up DESQview (normally **C:\DV**). However, for DESQview to function properly on a network, the SWAP drive must be set to a **unique location** for each individual user. See **Appendix A** for the details of how to set up the SWAP drive for different hardware configurations.

To implement the third method, where DESQview is shared, each individual DESQview user must thus have a private area assigned to DESQview and must start up DESQview on their local disk or on a private area of a shared disk.

Installing DESQview on a Server Machine

Many networks allow a machine to be used as both a "normal" computer and as the network server at the same time. To run a machine as a server, a special, concurrent extension to DOS is loaded. If your computer is a NetWare or LANtastic server, you can use its peer-to-peer facility by choosing the **Run on Peer-to-Peer Server?** option in the DESQview Setup: Network screen. This allows other users on the network to access your computer's hard disk and other resources.

However, if you load the peer-to-peer driver, there will be some degradation in performance when remote users access your computer, so only use this option if your workstation will usually be used as a server.

The DESQview peer-to-peer driver is called PEERSRV.DVR and will be loaded if you specify either the LANtastic or NetWare Lite option on the DESQview Setup: Network screen.

The peer-to-peer driver lets DESQview work on top of LANtastic's or NetWare Lite's server program. The server drivers may or may not work for network servers other than LANtastic or NetWare Lite.

Running DESQview with a network

To run DESQview with a network, load your network drivers and software first. If possible, it is desirable to load your network (and any other) drivers above 640K, using QEMM or QRAM, as is appropriate for your hardware. Doing so will leave more memory below 640K for DESQview and programs.

DESQview sees a network drive as any other hard drive, and you may run AUTOINST to automatically install the programs DESQview knows about on your network drives as well as your local hard drives. See ***Installation Notes, page 21,*** for information on running AUTOINST.

Novell's SEND command

Using Novell's SEND command to broadcast messages might hang DESQview unless you run NWCAST.EXE.

First install NWCAST on the Open Window menu. When you run NWCAST, a window opens to receive broadcast messages sent to your computer.

The NWCAST command supports two optional parameters, which may be combined:

- **NWCAST POPUP** brings the message window to foreground whenever a message is received, regardless of where it is on the stack.
- **NWCAST HIDE** hides the NWCAST window when it is loaded.

You will usually want to use both parameters, for example:

```
NWCAST POPUP HIDE
```

Optimizing DESQview on a Network

The simple methods for installing DESQview on a network do not make the best use of network resources, since they do not allow users to share DESQview files. If you want to optimize DESQview usage by sharing resources, you need to know which DESQview files can be shared, which cannot be shared, and which can optionally be shared:

- Files that can be shared by all users are: ***.EXE** and ***.COM.**
- File that can never be shared between users are: **SWAP????.DV**—the files containing the memory image of programs swapped out.
- Files that may optionally be shared are: **xx-PIF.DVP, xx-SCRIP.DVS, DESQVIEW.DVS, DESQVIEW.DVO, DESQVIEW.DVH, DESQVIEW.DIR,** and **DVSETUP.DV.** Normally, only **DESQVIEW.DVH** and **DESQVIEW.DIR** are shared. The other files usually have information that is specific to each individual user.

The fully shared and optionally shared files should be placed in a public area. The **SWAP????.DV** files should be placed on a local disk or on a private area of a shared disk. This is usually done by leaving the SWAP drive field empty and then starting up DESQview with the current directory set to the private area. (See **Appendix G** for a complete list of DESQview's files.)

If you want a customized version of DESQview, you should first copy **all** the optionally shared files to your private area. Then, you should create a batch file that starts up DESQview by changing to your private area, setting **PATH** to include the default directory where the fully shared DESQview files are kept, and then issuing the command to start up DESQview. (If your network provides a file facility feature[†], you may put only the optionally shared files you want in your private area. If you do not have a file facility, **all** the optionally shared files must reside in the subdirectory from which you start up DESQview.)

[†] Such as **APPEND** on a 3COM Network and **MAP SEARCH** on a Novell Network

D

Using DESQview with a Floppy-Based System

Because DESQview lets you run several programs at once, installing DESQview on a floppy-based or laptop PC requires a little extra planning to get the configuration that will be the most convenient for you. This appendix first discusses how to install your programs on a floppy-based system. Then, it discusses the two strategies you can use:

- The **quick** strategy uses your system the way it is already configured.
- The **laptop** strategy optimizes the use of DESQview on systems with high-capacity floppy drives.

Preparing a System Diskette

Before you install DESQview, it is necessary to have ready a blank, formatted diskette. Since it is usually most convenient to be able to boot your PC from the DESQview diskette you will create (called your **everyday DESQview diskette**), we recommend you prepare a **system** diskette. If you wish to use DESQview 386 on a floppy based system, you will need a high density (1.2MB or larger) system diskette. To make a system diskette:

- **Place your DOS diskette in drive A.**
- **Type A: and press ↵.**
- **Type FORMAT B: /S and press ↵.**

DOS responds by telling you to place the diskette you want to format in drive B and then to press any key (or, for some versions of DOS, to press Enter).

- **Place a blank diskette in drive B and press any key (or ↵).**

When formatting is complete, DOS will ask you if you want to format another diskette.

- **Type N to indicate that you do not.**

You must install DESQview 386—or at least the QEMM part of it—on a system diskette. You are not required to install DESQview on a system diskette. If you do not, you should probably copy **COMMAND.COM** from your DOS diskette to your everyday DESQview diskette. (See ***Installation Notes, page*** 22, ***note*** 6, for more information on how DESQview finds **COMMAND.COM**.)

Using DOS Services

Most of the commands used by the DOS Services Companion are built into DOS. A few, however, run programs, and thus require that a diskette containing the program be available in order to use the command—in particular, **Format Diskette, Print,** and **Copy Diskette** require programs. There are two strategies you can take:

- If there is room on your everyday DESQview diskette, copy the programs for the DOS commands you use to this diskette from your boot diskette.

- ☐ If there is not enough room on your everyday DESQview diskette, create a **DOS Services** diskette and put these programs, plus the DOS Services program, **DOSSERV.COM**, on this diskette.

Installing Your Programs in DESQview

Before you can install your programs in DESQview, you must install DESQview (see *page 17*) and you must know the basics of how to use DESQview. For this, we recommend that you walk through the steps of **Chapter 2,** ***Getting Started: A Tutorial***. Then, use the Add a Program command to tell DESQview which programs you are using.

The basic steps required to install programs in DESQview are given in *Adding a Program* on ***pages 100-103***. To summarize:

- **Start up DESQview, if you have not already done so—see** ***page 24.***

Then, with your everyday DESQview diskette still in drive A:

- **Display the DESQview menu and select Open Window.**
- **Select Add a Program to display the Add a Program Menu—the list of programs that DESQview knows about.**
- **Mark the programs you want to install in DESQview and select DONE.**

DESQview then displays the Program Location menu for each program you marked, in turn, so you can indicate where each program is stored. Since you normally run programs from drive A (and keep the program's data files on drive B):

- **Type A: and press ↵ — once for each program you marked.**

Finally, DESQview asks if you are done installing programs or want to install more:

- **Select DONE to indicate you have installed all the programs you want for now.**

If you have programs that are not listed on the Add a Program menu, install them using the Add OTHER Program command—see ***pages 104-107*** .

Next, you must decide which of the two basic strategies is best for you:

- ☐ If you have a laptop or other PC with high-capacity (720K or more) floppy drives, you should consider the **laptop** strategy. This takes more initial effort on your part to set up but, once you have made this effort, you get the closest possible equivalent to a hard disk system.
- ☐ If you have only standard-capacity (360K) floppy drives, or if you cannot or do not want to take the trouble to implement the **laptop** strategy, choose the **quick** strategy—which is not really a strategy at all so much as a set of do's and don'ts that you need to follow to run DESQview with your programs and diskettes configured the way they already are.

Implementing the "Quick" Strategy

The **quick** strategy is to use your program and data diskettes the way they are already configured and only create one additional diskette, your **everyday DESQview diskette** (see *page 17* for instructions).

With this strategy, you will usually have to shuffle diskettes each time you start up a program, each time you switch from one program to another, and each time you use Add a Program, Change a Program, online Help, and DOS Services. And, you will probably be unable to run programs in background.

When you use the **quick** strategy, there are certain do's and don'ts you **must** follow to avoid losing data:

- ☐ **You must start up DESQview from drive B.**
- ☐ **You must run all your programs from drive A.**
- ☐ Once you have started up a program (in drive A) and accessed a file (on drive A or B), ***never*** **remove either the program diskette or the data diskette without closing down all open files.** If you do, data may be lost, the program may hang, or both.

  Exceptions are: If you are sure that the program does not use overlays or otherwise ever read the program diskette once you start up the program, you can remove it. If you are sure that the program does not leave files open, you can remove the data diskette. (This is unusual. Most programs leave files open while you are working on them.)

  To determine if a program uses overlays, look at the files on its program diskette. Another approach is to watch to see if the diskette light flashes as you walk through the program's features. This method is not foolproof, however, unless you exercise **every program feature.**
- ☐ **You must put your everyday DESQview diskette back in drive B *before* you select a program from the Open Window menu.** If you do not, you get an error indicating that drive B is not ready or that DESQview cannot find the file **DESQVIEW.DVO** (if some other diskette is in drive B). Also, you must put your everyday DESQview diskette back in drive B to get online Help and to quit DESQview.
- ☐ If you want to run multiple programs, put all the programs you want to run at the same time on one diskette and all the data for all these programs on another. Once you start any of the programs, do not remove either diskette until you close all open files.

  Although it's possible to **freeze** a program (using the Freeze command or the Ctrl-NumLock key), remove its diskettes, and start up another program in drives A and B, this has certain risks. If you accidently switch back to the program whose diskettes have been removed, and press any key (which **unfreezes** the program), data might be lost, the program may hang, or both.

Implementing the "Laptop" Strategy

Although it will take you a few minutes to set up your system for the **laptop** strategy, this effort will more than pay for itself in improved convenience and functionality. You will effectively have a hard disk system—except for speed. To implement the **laptop** strategy, prepare:

- Your **everyday DESQview diskette**, containing DESQview **and** all the programs you want to use at the same time.
- Your **data diskette**, containing all the data files for all the programs on your everyday DESQview diskette.

To set up the two diskettes required by the **laptop** strategy:

- **Create your everyday DESQview diskette by following the instructions on *page 17*. Then, install all your programs in DESQview as per *page 234*.**
- **Copy all the programs you want to use together in DESQview onto this diskette. Then, copy all your data files to another, blank diskette.**

Now, to run DESQview:

- **Place your everyday DESQview diskette in drive A and your data diskette in drive B.**
- **Type A: and press ↵.**
- **Type DV and press ↵.**

If you cannot fit DESQview and all your programs on one diskette, there is a fallback position. After you have created your everyday DESQview diskette, make a copy of it, label it your "DESQview program diskette", and delete the DESQview files your system will not use. **Appendix G** lists and describes all the files that were copied to your diskette. Which files you can safely delete depends entirely on how your hardware is configured and what software you will be running. Briefly, you may delete the following files, under the following conditions:

- Those memory and device drivers your system will not use (files with an extension of **.DVR**):

  You may delete **EMM.DVR** and **DOSBUF.DVR** if you do **not** have expanded memory.

  You may delete **QEXT.SYS** and **DVXMS.SYS** if you do **not** have extended memory.

  Also, you may delete all the video drivers but the one your system uses. (See **Appendix G**).

- Those DESQview drivers your system will not use:

  You may delete **RMGRDV.DVR** if you have **Manage Printer Contention** set OFF (N) in the Advanced setup menu.

You may delete **LEARN.DVR** and **CONVSCR.COM** if you do not wish to use the keyboard macro feature.

- You may delete **DVANSI.COM** if you will **not** be using programs which require an ANSI driver loaded.
- You may delete **XDV.COM** if your system has only 640K of memory, with no expanded or extended memory.
- You may delete **DVPAL.COM** (the Palette program) if you are **not** running an EGA or VGA video adapter.
- You may delete **DESQVIEW.DVH,** the DESQview help file. If there was not room on your floppy diskette, this might not have been copied at all. However, if it was, and you wish to conserve disk space, you may delete it from the DESQview program floppy.
- You may delete **DEVICE.COM,** if you will **not** be needing to load a device driver from DOS or in a DESQview window.
- **AUTOINST.COM** is not generally used on a floppy based system.

Then copy all your programs to this DESQview program diskette. To run DESQview, start it up as described above, replace your everyday DESQview diskette with your DESQview program diskette, and then put your data diskette in drive B.

If you run copy-protected programs, you can either abandon the **laptop** strategy and use the **quick** strategy or use a hybrid strategy for the copy-protected programs. Copy to each copy-protected diskette the files **xx-PIF.DVP** and **xx-LOAD.COM** (if any) for the program. Then, to start up the copy-protected program, place the program diskette in drive A before you select it from the Open Window menu. You must observe the restrictions listed on *page* 235 while you are running this program and should **freeze** it before you switch to another program.

Notes:

E

This appendix addresses the most common questions we encounter from DESQview users as well as some usage tips we find very handy. If you have a question or a problem, check here first. Also check the index. If you need to call, write or FAX Quarterdeck Technical Support, see *page 265.*

DESQview Tips and Troubleshooting Guide

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General Troubleshooting Guidelines

If a particular software product does not behave as DESQview expects, according to the default settings in the DVP (DESQview Program Information File), you can change those settings. Most, if not all, initial software problems can be solved by using the Change a Program command to modify the DVP or the DESQview Setup program to modify the DESQview environment.

If a program still exhibits difficulty running under DESQview, run it as the only window, if you can, to make sure it is not actually a conflict with another program in memory causing the problem.

If you cannot get a program to start up at all in DESQview, but you have verified that it runs correctly outside DESQview or in a Big DOS window (see *page 246*), run Change a Program on the program and note the values of the various fields and options. Then, check if the **Close on exit** option is ON (Y) or blank. If it is, turn it OFF (N). Start the program again. This time, the program window will remain open after startup fails so you can see any error messages that might occur. To close this window, type EXIT and press Enter. Correct the situation indicated by the error message and try the program again.

Not Enough Memory to Run a Program

Probably the most common source of problems with software running inside DESQview is that not enough memory has been allocated for a particular program. Insufficient memory problems have various symptoms, for example, display problems, hanging, working perfectly until a certain feature of a program is used. These symptoms may or may not generate any error message and may even seem to be random.

Give a program more memory at the first sign of a problem by increasing the number in the **Memory Size (in K)** field of the Change a Program menu. You may also specify a number in **Maximum Program Memory Size** that is larger than **Memory Size (in K).** See *Very Large Programs, page 245.* Also see the section of **Chapter 7** titled *More About Allocating Memory*, which begins on *page 178*. If that solves a software problem, and you feel the program should not require that much memory, you can always step it down.

If DESQview hangs when you switch windows it is most likely that the program you switched away from had too little memory allocated to it.

If You Cannot Start DESQview

Where DV command line switches are suggested in the diagnostic procedures described below, be aware that you can use more than one startup switch on the DV command line, although for diagnostic purposes, using them one at a time is probably better. Command line switches are documented, starting on *page 266*.

If DESQview 386 Hangs on Startup

On a 386 computer, DESQview 386 will load parts of itself high if it finds room in the memory between 640K and 1024K. If there is a conflict between DESQview and another program or a driver loaded in the same area of high memory, it could cause DESQview to hang on startup. To diagnose this situation, you need to force DESQview to load low. If DESQview starts up with no problems loaded low, then you know the problem is a conflict in high memory. There is also an outside possibility that the file which loads DESQview high is corrupt.

To force DESQview to load low, type the following command line to start DESQview:

```
DV /EXCLUDE=A000-FFFF /EXCLUDE=FFFE
```

This command excludes all the memory between 640K and 1024K and the HMA from DESQview, forcing DESQview to load itself low. If DESQview now loads without a problem, you most likely have a conflict in high memory and there is a little more work to do; you need to find and exclude the memory address in contention.

It would be unwise to continue to use this command to start DESQview because you are preventing DESQview from using the entire range of high memory. If you need an exclusion, you probably only need a very small exclusion which leaves the rest of high memory available so DESQview can use some of it for itself.

To determine what addresses in high memory DESQview uses for itself, quit DESQview and start it again with the following command, which uses the /LIST switch:

```
DV /LIST
```

Note the addresses that display on the screen. Then, check the documentation for your video card, network card, etc., to determine if any of your devices are set up to use any of these addresses. If so, you have found a culprit.

Exclude the address or addresses (preferably using your memory manager) from DESQview's use.

The memory listing usually occurs before any conflict happens. If DESQview hangs before the memory listing finishes, this usually indicates a bad file or a disk problem. See below for a technique to identify and correct a corrupt DV.COM file. If this does not work, there may be a conflict with your hard disk, in which case, call or FAX Quarterdeck Support.

See your QEMM or QRAM manual for how to detect and exclude a conflict, and exclude the appropriate memory address range on your QEMM or QRAM line rather than the DESQview command line. It is preferable to exclude using the memory manager because if DESQview should not use a piece of memory that another program or driver wants, neither should anything else.

Another way to test for a conflict in high memory that tests the integrity of the DESQview executable itself, is to temporarily eliminate the part of the executable that loads DESQview high. This file is DV.COM, which is a copy of XDV.COM. Check to make sure that both files are in your DESQview directory. Rename DV.COM to another name, such as DVCOM.BAK, so it will not execute. Now, start DESQview by typing DV (this executes the file, DV.EXE in the absence of DV.COM). If DESQview now loads, then the problem is either a conflict in high memory or a corrupt DV.COM. Copy XDV.COM to DV.COM to ensure that there was not a problem with the DV.COM file itself.

Disk or File Problem

To test for a disk or file problem that could be causing DESQview to fail, quit DESQview and run the DOS disk-checking program, CHKDSK. (For a warning regarding CHKDSK, see *page 261.*) Another way to reveal file problems is to copy files to a nonexistent device with the DOS command:

```
COPY *.* NUL
```

DOS then reads every byte of each file in the directory and reports any errors it finds. The files are copied to a nul file, which is discarded when the command finishes. Better yet, if you have a disk testing utility you can use it to test each cluster and sector of your hard or floppy disk.

If you can start DESQview from a floppy disk, but not your hard disk, reinstall. If reinstallation does not help and you have checked the DESQview distribution disk for errors, then a hard disk conflict is suspected, in which case call or FAX us.

Script Problem

You may have created or modified a startup script for DESQview that is not working properly and causing DESQview to appear to fail on startup. If there is a file named DESQVIEW.DVS in the DESQview directory, a startup script may be present. To test for a faulty startup script, temporarily rename the file, DESQVIEW.DVS, to something else and start DESQview. If DESQview now starts, use Convert a Script (see *page 283*) to edit the script file, or erase it and create a new one using Learn.

DESQview Setup Problems

If DESQview Setup has not been properly configured or if the setup file (DVSETUP.DV) is corrupt, it could cause DESQview to hang on startup. To test for a setup problem, start DESQview with the following command:

```
DV /NOSETUP
```

This starts DESQview with a default setup instead of using the setup file that Install configured or that you may have modified. If DESQview starts up with this parameter, erase or rename your DVSETUP.DV file and run the setup program (See **Appendix A**) to create another setup file. In particular, make sure the appropriate video adapter is specified. If you are not certain which DESQview video driver is right for your system, it will not hurt anything to test different drivers.

The /NOSETUP switch also inhibits LEARN.DVR from loading, thus disabling any start-up scripts from executing. (In addition, no other script can be played back or learned.)

If You Cannot Quit DESQview or Close a Window

If you cannot close a window, chances are the **Allow Close Window command** option in Change a Program has been set to N (No) for at least one of the windows currently open. This is usually done so a user is forced to quit a program using the program's own quit command, since using the DESQview Close Window command closes the program without saving any files, etc.

If you have a window open that does not allow the Close command, the Close option on the DESQview menu is disabled and you get a beep if you try to use the Close command.

If such a window is open, the Quit command is also disabled. You will not be able to quit DESQview until any and all windows which disallow the Close command are closed by quitting the program. If the window that disallows the close command is hidden, use the Switch Window command to bring it forward so you can quit the program.

Memory Issues

Appendix B covers the broad spectrum of memory issues pertinent to the DESQview environment, but basically:

- You want to give DESQview the most possible memory, so either load high or remove any DOS resources, programs and/or drivers that are normally loaded before DESQview. You can load items high if you are using a memory manager and you have enough of the right kind of memory on your computer (see **Appendix B**). Print spoolers, RAM disks, caches and mouse drivers can usually be loaded high. In addition, load memory resident popup type programs in their own window, if appropriate; not before DESQview.
- DESQview will load itself high if it finds usable addresses in high memory (see **Appendix B**). Reducing DESQview overhead leaves more memory for larger DESQview windows. (Also see **Appendix M** regarding using DOS 5 with DESQview.)
- Familiarize yourself with the configurable items in DESQview Setup (see **Appendix A**) that use memory. These are: Common Memory, DOS Buffer for EMS (Advanced Setup/Performance), Network Buffers (Advanced Setup/Network). If, after researching these fields in **Appendix A**, you find you can reduce the amount of memory one or more of these items use, you can gain a few more kilobytes of memory out of DESQview. Sometimes just a small amount of memory, like 1-4K, makes a difference. You can also disable DESQview's Learn (keyboard macro) feature and save 12K, if you can live without Learn.

Memory Resident Programs

Memory resident programs (also called TSRs, which stands for Terminate and Stay Resident) should be run in their own window, if possible. In cases where the memory resident program **must** pop up over a program, such as a program that reads the screen to find a lookup string, the best strategy is to load the memory resident program in a window, then load the program in the same window. As in the section above, on device drivers, you can do this with a batch file that starts the TSR and then the program.

Configure a memory resident program to run in non-resident (sometimes called stand-alone) mode, if the program supports this option. That way, whenever you switch to the program's window it will already be popped up.

If you are using a Quarterdeck memory manager, it may be possible to load a small memory resident program high with OPTIMIZE if you have enough usable contiguous memory between 640K and 1024K. If the program is one that can be added to your AUTOEXEC.BAT or CONFIG.SYS file, add it and then run OPTIMIZE. If OPTIMIZE can find room for it in the memory between 640K and 1024K, it will load the program high so it will not use any of the precious conventional memory. However, when you switch to a memory resident program started before DESQview, all background processing stops.

If you load a memory resident program in its own window, DESQview can manage the program and it will coexist better with other programs you run under DESQview.

Determining the Maximum Memory DESQview Can Give a Program

To find out what is the maximum memory your system can offer a program inside DESQview in its current configuration, run **Memory Status as the first program** and note the amount of **Largest Available Conventional memory.** (See **Appendix B** for a discussion of the Memory Status program.) Note that the largest available conventional memory is larger for the first window you can open than it is for subsequently opened windows. **Largest Available Expanded Memory** determines the largest memory size for all windows opened after the first. If you have a program that requires a lot of memory, always load it first.

Very Large Programs

When using large programs (CAD, Desktop Publishing, etc.) in DESQview, it is usually necessary to give the program as much memory as possible. (See **Appendix B** for a discussion of what kind and how much memory you need for your computer.) If you can, run your largest program in the first DESQview window you open. You get maximum memory available for programs when you set the memory sizes in the DVP as follows:

Program Memory Size (in K): 450
Maximum Program Memory Size: 800

This setup will guarantee at least 450K for the program. Then, DESQview will allocate as much more conventional memory as it can find available in your system. In some cases, you may find it useful to force a program to swap using **Rearrange/Put Aside** in order to free enough memory to run another large program.

The above strategy works well for regular DOS programs (provided you have enough memory installed on your system). DOS Extended programs, however, usually require relatively little conventional memory and keep most of their code and data in expanded or extended memory. For DOS Extended programs, be sure to allocate enough memory in the **Maximum EMS/XMS/VCPI/DPMI (in K)** field of the DVP. This field regulates extended as well as expanded memory.

If Expanded Memory Disappears

If you have expanded or extended memory on your system and find that all of your expanded or extended memory suddenly seems to become unavailable, most likely you are running a program that immediately grabs all available expanded or extended memory when it starts up. Once a program takes all the expanded or extended memory for itself, the memory cannot be used by anything else, until the program gives it back which, most likely, will not happen until you close the program down.

To determine if a program is grabbing all expanded or extended memory, run the Memory Status program (see **Appendix B**) and note the **Total Available Expanded Memory** value. Then, one at a time, open each program that uses expanded or extended memory. Close each program before you open the next. After the program starts up, switch to the Memory Status window and check the **Total Available Expanded Memory** value again. When it drops to zero, you have found the program (or, at least one of them) that is grabbing all your expanded or extended memory.

To solve this problem, you can limit the amount of expanded or extended memory a program can have by running Change a Program and setting a **Maximum EMS/XMS/VCPI/DPMI (in K)** value for the program to something reasonable. If this field has no value in it (left blank) the program gets as much expanded or extended memory as it wants—which can be all of your expanded or extended memory.

If this field has a value in it, the program gets as much expanded or extended memory as DESQview can find available on your system, up to the specified value. If you do not want the program to get any expanded or extended memory, enter 0 (zero) in this field. Also, the program itself may have a startup parameter or a DOS environment variable that you can set which specifies the amount of expanded or extended memory it can have. You may need to experiment to find the optimum expanded or extended memory under DESQview for the program.

Some VCPI programs, unfortunately, ignore the Maximum EMS/XMS/VCPI/DPMI value that you set in Change a Program and will take all your expanded memory anyway.

Diagnostic Techniques

The following techniques can help you troubleshoot and correct a problem starting or running a program in DESQview. First, be sure the program runs without problems outside of DESQview.

Use the Big DOS Window as a Model

If you are having problems running a program inside a DESQview window, and you have determined that it runs without error outside of DESQview, open a Big DOS window, navigate to the program's directory and start it exactly as you do from DOS. If it runs in a Big DOS window, it can definitely be configured to run in a DESQview window. (Be sure you run it in the Big DOS window's default configuration. If Big DOS has been modified, install another one using Add a Program.)

The Big DOS window is set with parameters which allow almost any program to run in DESQview. If your program runs in Big DOS then it will run in DESQview. In fact, you could simply use Change a Program on Big DOS and only modify the **Program Name**, **Keys to Use** and **Program** items. This results in creating a clone of the Big DOS parameters except for those items changed. Note that you can clone any DVP by changing **Keys to Use**. This is useful both as a diagnostic technique and also for installing several versions of the same program.

The parameters may not be set in the best possible way (you may want to allow more or less expanded memory for example), but at least the program can get started.

Hardware Problems

Hardware sometimes takes memory for itself on startup which may conflict with memory DESQview or a program running in DESQview is trying to use. We have also seen ROMs which do not correctly report the memory addresses they use, network cards and video adapters that take more memory than they report. Then, when DESQview uses the unreported memory, suddenly the conflicting device will not work.

For problems like these, you need to determine the memory used for these devices, either from the hardware documentation or from the manufacturer of the device, and exclude more memory for these devices. (See /EXCLUDE under ***Command Line Switches, page 266,*** and also see your QEMM or QRAM manual.)

Information about your hardware, such as what memory addresses your video adapter board uses, or whether or not you have a bus mastering hard drive, is in the documentation for these products or available from your hardware vendor or manufacturer. You may be able to diagnose hardware/software memory conflicts by using an analysis utility, such as Quarterdeck Manifest. What you are looking for is software or hardware that competes for the same memory address or hardware interrupt.

You may never have seen problems from such a conflict before you used DESQview because you were running one program at a time and it had the whole computer to itself. For instance, some hardware that uses bus mastering when run in a multitasked environment with 386 memory management causes a memory error when starting a program that uses expanded memory inside DESQview. Contact the vendor for a VDS (Virtual Device Services) driver. Also check to see if the driver you already have for such a device supports a command line parameter (sometimes referred to as a switch) which can be used to resolve conflicts.

Video adapter cards which support **autoswitching** have sometimes been known to cause problems with DESQview, when autoswitching is enabled. Your VGA card may call it something other than autoswitching, like autodisplay. Check your video adapter card's documentation to find out how to disable autoswitching on your video adapter card.

Do not be intimidated by your hardware documentation. Though it might seem daunting, the hardware manual can provide just the information you need to resolve a DESQview conflict. If possible, you should contact your hardware or software vendor or manufacturer to see if they have information on running their product with DESQview; many do.

At Quarterdeck Technical Support, we log demonstrable conflicts as we hear about them. If you are having trouble that you cannot analyze and correct with the information in your manual(s), and you have an active support account, you may call, write or FAX us for assistance. We'll need your registered serial number when you do.

We usually have fixes for hardware conflicts we know about. Commonly, hardware and software vendors modify their products to work with DESQview when problems are reported. For instance, if your problem is caused by a ROM BIOS incompatibility, it is likely that an upgrade of your ROM BIOS is available from your hardware vendor. If you call us regarding what you suspect to be a hardware problem, please also have all your hardware manuals handy. When we know exactly what hardware is installed on your computer, we can find any information we have on previously reported problems with that hardware. If we have seen the problem before, we probably have the solution. If not, we will work with you to find one.

If a program crashes on startup in DESQview the first line of defense is to give it more conventional memory (and more expanded memory, if appropriate). Then, investigate other DVP settings which might address the problem. When you have explored all the DESQview environment and DVP issues and the program still crashes on startup, you might investigate a conflict in high memory.

Occasionally a program will overstep a memory address between 640K and 1024K that DESQview 386, QEMM or another program or hardware device is using. To diagnose this, first manually load DESQview entirely in conventional memory using the technique described on *page 241*. (Be sure to first disable a DESQview startup script, if you have one.) Then, run the program in question in DESQview. If this corrects the problem, there may be a conflict in high memory. If you are using QEMM version 6 or later, you can use OPTIMIZE's internal automatic exclusion detection to remedy this.

Navigate to the directory and run OPTIMIZE with the /AUTOEXCLUDE switch, which tells OPTIMIZE to look for memory access between 640K and 1024K and automatically excludes the accessed memory addresses. Simply follow the on-screen instructions until OPTIMIZE completes.

When the OPTIMIZE process has completed, your CONFIG.SYS file will have been modified so that high memory addresses that were accessed by the program you tested have now been excluded from QEMM's use. Now try the program again inside DESQview and see if the problem still exists.

Another way to check for a high memory conflict is to run through QEMM's Analysis procedure. This procedure, an effective method of determining high memory conflicts, is outlined in your QEMM manual.

Finally, if you are especially familiar with computers, and none of the above seems to resolve the conflict, the following process may be of help:

- **1) Set "Protection Level" in the program's Change a Program screen to 3.**
- **2) Run the program.**
- **3) When DESQview pops up an error message (often about a program accessing memory that is not in its address range), jot down the address given and let the program continue. Keep doing this until the program fails.**
- **4) When the program fails, write down the last message. If it gives an address in upper memory, either 1) exclude that area or 2) use Manifest to see what program is loaded at the specified address.**
- **5) If DESQview is loaded at that address, start DESQview with DV/X=????-???? (this should be a 4K range that surrounds the address given by DESQview's error message in Step 4). If, on the other hand, a driver or TSR is loaded at that address, try loading that program low.**

Mouse Problems

If your mouse does not work in DESQview and you have determined that the mouse works properly outside of DESQview, the first thing you should check is DESQview Setup. Make sure DESQview is set up to use a mouse. DESQview is most compatible with Microsoft and Microsoft-compatible mice. Current Logitech mice use a Microsoft Mouse driver.

Make certain the mouse is not contending for either its port or its IRQ with another device, such as a modem.

Sometimes a conflict can occur between what a program does with a mouse and how DESQview tries to virtualize the mouse. If you are having trouble using a mouse in a particular program inside DESQview, sometimes changing the program's mouse setup helps. If you are using a Microsoft-compatible mouse, tell the program that you are using a real Microsoft mouse. This improves the mouse's communication with DESQview. You should load a mouse menu program in an individual program's window, not before DESQview.

If your mouse menu is not working properly, see the /DELAYMSMOUSE:Y switch in the listing of command line switches at the end of this appendix.

Bus Mice and Interrupts

The hardware interrupt that your bus mouse is using should be investigated if you are having bus mouse problems in DESQview. Except for mice that run on special mouse ports (which use IRQ12), bus mice can use IRQ2 through IRQ7 in DESQview 2.25 and earlier. Starting with DESQview 2.26, bus mice can also use IRQ9 through IRQ13 and IRQ15 on ATs and 386s (the hard disk interrupt, IRQ14 is excepted). The convention is to place bus mice on IRQ2 on PCs and XTs and on IRQ5 on ATs and 386s. A bus mouse on IRQ5 on a PC or XT will be in conflict with the hard disk.

Mouse Droppings

If your mouse leaves colored rectangles behind as you move the mouse cursor, first check to see that both the proper mouse driver and the correct mouse port are specified in DESQview Setup. If mouse droppings occur in a non-virtualized window, try turning virtualization on (see **Chapter 7**).

Try switching how you load the mouse driver. If you are using MOUSE.SYS in CONFIG.SYS, try MOUSE.COM in AUTOEXEC.BAT instead, or vice versa.

Mouse Will Not Leave the Window

If you cannot move a mouse outside a window or display the DESQview menu using the mouse, it is because the program in the window is using the mouse. DESQview gives control of the mouse to programs that use it. To move the mouse out of the window or display the DESQview window, tap the DESQ key. DESQview then takes control of the mouse again and you can use it to perform a DESQview function, like clicking on another window, marking text, etc.

Mouse Suddenly Stops Working in DESQview

If DESQview has lost control of the mouse, for instance, if the mouse suddenly does not work on the DESQview menu, you can use the Revive Mouse command to correct the situation. On the DESQview menu,

- **Select Rearrange/Tune Performance, then**
- **Press F2 to revive the mouse.**

Do not use the Enter key or try to click on Revive Mouse. (**If the mouse is unconscious, then clicking on Revive Mouse will not help,** so use the keyboard!)

- **Use the F2 key or use the arrow key to select Revive Mouse and press Spacebar.**

Paths in DESQview

You do not need to set a DOS PATH to a program that you want to start from a different directory if you are starting the program with a DVP that contains a fully pathed command in the Program field. Enter the startup directory in the Directory field. This is usually your data directory. By default, DESQview puts the program's directory in the Directory field. You will need to use Change a Program to modify this.

DESQview follows the DOS environment variable, COMSPEC. Do not redirect COMSPEC; use a fully qualified path.

If you get a DESQview error message indicating problems finding a file needed to start a program when you try to start up a program inside DESQview (for instance **File not Found** or **Path to Load File not Found**), check both the path specified in the Change a Program screen and, if you are on a network, any conflict the mapping of network drives might be causing. If you specify a nonexistent path in a DVP, DESQview looks in its own directory (usually C:\DV) by default. If the path specified in the DVP points to a disk other than the one on which DESQview is installed, DESQview looks in the logged directory of that drive instead.

If you get an error message from a program saying it cannot find one of its files, such as an overlay, and you absolutely know the path in the DVP is correct, it could that be too little memory has been allocated for the program. Try increasing the value entered for **Memory Size (in K)** in the DVP.

Also, make sure that the DOS resource, FILES, is set to a number appropriate for your system and your software. If you have QEMM or QRAM, it came with **FILES.COM.** To run it, type **FILES** and a display showing how many files you have set will appear.

Using System or Device Drivers

If you use DOS MODE or PRINT commands or load device drivers, you should generally load them before you run DESQview. (Drivers loaded by CONFIG.SYS are automatically loaded first.)

There are some cases, where a driver is specific to a certain program, when you want to load the driver in the program's DESQview window. Quarterdeck provides two TSR device drivers which can be used to load drivers in a window.

DVANSI.COM is a DESQview-compatible ANSI driver. If your program needs ANSI.SYS, run DVANSI.COM in the window before starting the program. You can do this from a batch file that starts DVANSI, then starts the program. Enter the name of the batch file, including the .BAT extension in the Program field of the program's DVP, using Change a Program.

If you use DVANSI.COM, you do not need to load ANSI.SYS in your CONFIG.SYS file, unless you are using ANSI outside of DESQview. DESQview itself ignores ANSI.SYS.

If you wish to use another ANSI driver instead of DVANSI.COM, use the DESQview device loader, DEVICE.COM, with the syntax:

DEVICE filename

to load the driver in a DESQview window.

If you load a device driver in a DESQview window, the device driver is only available to the program running in that window. If you load a device driver from DOS, the device driver is available to any and all programs.

DEVICE.COM can be used to load any character-type device driver, but not a block type device driver.

Communications Programs

It is important that communications programs get enough clock ticks to process information as it is received. This is especially critical for high-speed communications, as more information is being received per clock tick.

Communications programs get information either through a hardware interrupt or by polling. If you are experiencing problems, find out which method your communications program uses. If it uses the polling method, it is unlikely that it would work in DESQview. Communications programs, as a rule, should be non-swappable, however, see below, ***Swapping Communications Programs*** for an additional note on this.

If you want to telecommunicate in the background, be sure the program is set up to run in background, and be sure that background programs are getting enough clock ticks in your setup configuration or by setting this from the Tune Performance menu. Set **Optimize Communications** to Y in DESQview Setup.

Be sure you have no hardware conflict on the COM port.

For high-speed communications, the hardware ports must be serviced at their maximum speed. This may require a buffered serial port, like a 16550 UART and a program that is set up to use it.

If you are using DESQview's autodialer, be sure it is not interfering with your COM program. Check DESQview Setup and use the **Leave As Is** setting if you suspect a conflict between your COM program and the way you tell Autodial to set up the modem when it makes a call.

Swapping Communications Programs

Communications programs should have the **Can be swapped out of memory** option turned OFF, as a rule. You may however, if it is set to **N**, manually swap a communications program out if it is not actually engaged in communications. **If you observe the following caveat,** you may even allow another program to use the same COM port while the first is swapped: When a communications program is swapped back in, it will remember which port it is connected to. If, while it was swapped out, another program reinitialized the COM port in a different way (for instance a different baud rate), the first program will probably fail. If you wish to use the same COM port for two or more programs which will be swapped, you must make sure that both programs initialize it the same way.

Running a BBS in a DESQview Window

You can run most BBS software successfully in DESQview if you configure the DESQview system, the communications program and the DESQview window properly. Since DESQview is an environment favored by many SYSOPs, many BBS programs and additional drivers (such as FOSSIL drivers) are DESQview compatible and can be configured for DESQview.

If you are using a FOSSIL driver for your BBS, how **Uses Serial Ports** is set in the Change a Program screen depends on whether you load the driver before DESQview or inside DESQview. If the FOSSIL driver is loaded before you start DESQview you can leave Uses Serial Ports set to N (although Y will work). If the FOSSIL driver is loaded in the DESQview window before starting the BBS software, set Uses Serial Ports to the port (1 or 2) on which the modem is set up or to Y if using another port. If more than one serial port is in use, be sure each is set up on its own IRQ. (It is possible to share an IRQ when using a FOSSIL. Check your FOSSIL documentation to see if it supports this feature, and for details on how to implement IRQ sharing.)

For BBS software, the most important DVP settings have to do with COM ports and swapping. Make the BBS window one that is non-swappable and have the DVP specify the correct serial port or ports. If you want the BBS to run in background, set **Runs in Background** to Y in the DVP. In DESQview Setup/Advanced Setup/Performance, **Optimize Communications** should be set to Y to start with and changed to N to troubleshoot a problem. If you need CTTY support, set **Manage Printer Contention** to Y. If you have a fast computer, clock ticks should be 2:2 or 3:3. 1:1 works on some machines. Start with 3:3 and experiment. Too few clock ticks for the BBS program may result in dropped characters.

For high-speed communications, the hardware ports must be serviced at their maximum speed.

Running a BBS in a DESQview Window (cont'd)

This may require a buffered serial port, like a 16550 UART.

Setting up a multiline BBS generally follows the same procedure as a single line BBS, but you must use the BBS software's facility and DOS SHARE for file sharing if your BBS software requires it. DESQview does not provide any file sharing services. Check the documentation for your BBS. Do **not** just load multiple copies of the BBS software to implement a multiline BBS without configuring each node individually.

If you experience problems running the BBS, check to make sure that the BBS runs correctly outside of DESQview. Run each node independently to verify its setup.

Terminal Emulation Programs

In general, when running terminal emulation programs, you should use the same diagnostic guidelines as for most programs. Check device drivers first. Run the program in a clean environment, with a minimal CONFIG.SYS and AUTOEXEC.BAT. Remove any TSRs and drivers you can possibly live without from memory or load them high, if you can. Additionally, you may need to experiment by loading some of the drivers before DESQview and others in the DESQview window, before the terminal emulation software is run. Some versions of IRMA, for instance, run better in a DESQview window if you do not use their keyboard driver, **KYBDDRV.SYS.** Some terminal emulation programs require **Keyboard Conflict** set to a value of 8 in the associated DVP.

If terminal emulation is via a gateway over a network, be sure the Network options in Advanced DESQview Setup are set appropriately for your network.

Some versions of IBM 3270 terminal emulation disable certain features when they detect that they are running in DESQview. There is a driver available from the Quarterdeck BBS, **NOVER.COM**, which can be used to overcome this, if you want. Refer to the Passport support pamphlet that came with your copy of DESQview for information on accessing our BBS. If you are losing connection with the mainframe running the terminal emulation program inside DESQview, and do not have this problem outside of DESQview, check to see if the mainframe simply needs a little more time to receive a signal from the PC. If so, adjust the mainframe accordingly.

Use the Change a Program menu to configure your terminal emulation program to run inside a DESQview window. With terminal emulation software, always make sure the DVP is one you have created with the Change a Program menu and **not** one that comes with the program. If your terminal emulation program causes problems for other programs when it runs in background, you must set **Runs in Background** OFF (or enter D in this field—which will run the program in background except when another program or DESQview is making a DOS call. See *page 187*). You should make a terminal emulation program non-swappable if it is configured to run in background and you expect that, while running in background, it will be transmitting or receiving information. Since the program may not use a Serial Port, DESQview will not automatically do this for you unless you specify it.

If the problem seems to be a keyboard problem, refer to the section on Keyboard Conflict at the end of **Chapter 7**, ***Changing a Program's Information***. For instance, some terminal emulation programs grab keystrokes from a foreground program when running in background. To remedy this, you should set **Keyboard Conflict** to 4 in the terminal emulation program's DVP. Also, in DESQview Setup, you should have **Maintain Separate Shift States?** set to Y.

If you suspect a memory problem, check the program and the hardware's documentation to see if either the software or hardware use any memory between 640K and 1024K. If so, exclude this memory from DESQview or (preferably) your memory manager. (See **/EXCLUDE** in the section on ***Command Line Switches*** at the end of this Appendix.)

Also, be aware that some general purpose communications programs, like Relay and Crosstalk, might be compatible with your terminal emulation hardware and may be able to interface with a mainframe better in DESQview than dedicated terminal emulation software.

Performance Problems

This section addresses questions you might have about the speed of some operations under DESQview and the swapping of programs in and out of memory. In general, applications running under DESQview run at almost normal (outside of DESQview) speed. When multitasking, applications may lose additional speed, depending on how many windows are open and how much of the processor's time each is using.

If File Operations Under DESQview Seem Slower

DOS performs file operations using a technique called direct memory access (DMA) that allows two different pieces of hardware to access memory simultaneously. For file operations, this allows the processor to continue to run programs while the disk controller performs the file operation in parallel.

However, expanded memory is not compatible with the DMA hardware. So, when a program running in expanded memory performs a DOS file operation, DESQview intercepts the DOS command and tells DOS to perform the command using real (conventional) memory instead.

DESQview initially allocates a 2K area of conventional memory for such DMA operations. If DOS file operations in DESQview seem to be slower than outside of DESQview, it may be that this area is too small. To increase its size, run the Setup program and change DOS Buffer for EMS (see **Appendix A**). Try increasing it in 2K-3K increments. There is little value in increasing it beyond 15K. Increasing DOS buffers for EMS will reduce your maximum window size, but may improve disk performance.

DESQview 386 users who are **not** on a network should set DOS Buffers for EMS to 0, which will both improve performance and save memory.

Swapping Too Slow

DESQview will swap to expanded memory, if available, which is fairly fast. If swapping seems to take a while, DESQview is probably swapping to disk, meaning you either have no expanded memory or it is all in use. You can direct DESQview to swap programs to a RAM disk, if you have one, by specifying the RAM disk's drive designator in DESQview Setup/Advanced Setup/Swapping. However, a RAM disk takes memory as well, so you probably need to analyze the memory on your computer and decide how best to allocate memory resources to run the most possible programs in DESQview (see **Appendix B**).

Too Much Swapping

If you see the **Swapping...** message more often than you think you should, check the following:

- ❏ Do you have the largest program (in memory size) loaded in the first window?

The window you can open in conventional memory is larger than a window you can open in expanded memory. However, if you use ALL the conventional memory for your first program, or a subsequently opened program uses the remainder of your conventional memory, you will not be able to open any more programs without swapping.

- ❏ Do you have a program running which is grabbing all of the expanded memory in your system? (See *page 245*).
- ❏ Are any of the programs running in DESQview set up to use more memory than they actually need (in the DVP)? This appendix specifies a number of ways you can give a program more memory; however, once you have it running reliably, it is usually a good idea to experiment with the value in **Memory Size (in K)** field to see if the DVP is allocating more memory than necessary.
- ❏ Are you giving DESQview as much memory space to run programs as is possible on your system?

The above checkpoints address memory issues covered in other sections of this appendix. DESQview swaps programs out so that you can use more memory than is actually on your system to run more programs in windows than would otherwise be possible.

If you want, you can disable swapping in several ways:

- ❏ You can disable swapping on the fly for a particular program by displaying the Rearrange/Tune Performance menu and setting **Allow Swapping Out?** to N (No).
- ❏ You can disable swapping for the entire system in DESQview Setup/Advanced Setup/Performance. Set **Allow swapping of programs?** (Y/N) to N (No).
- ❏ You can disable swapping for a particular program by running Change a Program and setting **Can be swapped out** to N (No).

If Your PC Slows Down When You Mix Text and Graphics Windows

When you switch between two programs, one of which is working in text mode and one of which is working in graphics mode, DESQview tries to avoid switching video modes by displaying text information in graphics mode. Converting text to graphics, however, is computationally intensive and may thus slow down the text program. If this is a problem, you can tell DESQview never to mix text and graphics by running the Setup program and turning OFF the **Do you want text & graphics displayed at the same time?** option (see **Appendix A**). Or, you can use the Rearrange/Hide command to remove the graphics window from the screen before you switch away from it.

DESQview Video Support

DESQview is able to fully support 640x480 VGA mode because it follows the IBM VGA specification. While VGA and SVGA cards support higher resolution modes, these high resolution modes are not standardized, video cards tend to implement them differently and DESQview does not fully support them. However, you can work around this somewhat under certain circumstances.

DESQview can save and restore 800x600 resolution on some VGA cards if **Graphics Pages** is set to 4 (See **Chapter 7**), however 800x600 cannot be virtualized, meaning a program running in this mode cannot run in background (and will be suspended when zoomed to a small window). If you really need a high-res program to run in background (for instance to print a large file while you work in another window) you can force DESQview to run such a program in background by setting **Runs in Background** to Y and **Virtualize Text/Graphics** to N. If the program does not update the screen while it is in background, there will be no effect. However if the program does update the screen, whenever the program redraws the screen, it will bleed through.

You can configure most graphics programs to run in a generic video mode compatible with DESQview.

If Your Graphics Screen is not Completely Restored

If you switch away from a program that is displaying graphics information and then, when you switch back, you find that part of your video information is missing or garbled, run Change a Program on the program and be sure that the **Displays graphics information** option is turned ON. If the problem persists it may be because:

- ☐ The program is using more than one page of graphics memory. Run Change a Program and try setting **Graphics Pages** to 2 or higher (see *page 180*).
- ☐ You did not give DESQview the correct setup information at installation. Run the Setup program (see **Appendix A**) and verify that the Video option correctly specifies the type of display adapter board you are using and selects the correct **Current Graphics Driver.**
- ☐ Your video adapter is using autoswitching. Disable autoswitching on your video adapter card.
- ☐ The program is using a graphics mode not fully supported by DESQview. In this event, the only way to keep the screen image from becoming damaged when you switch away is to switch into text mode, or into a graphics mode that DESQview does support, before you tap the DESQ key. If the program does not permit either of these two options, there may not be a way to have the screen restored correctly by DESQview. However, the program may have a redraw command that you can use to restore the screen when you switch back. If you configure the program, via its own—not DESQview's—setup procedure to run in a more generic video mode which is supported by DESQview, it will run in DESQview.

If Your VGA or EGA Display Changes Colors

The enhanced graphics (EGA) and Video Graphics Array (VGA) display adapters, while greatly improved over previous graphics adapters, still limit the number of colors that can be displayed at one time. To increase the total number of possible colors, the EGA and VGA allow programs to define and switch between color palettes (groups of colors).

To maintain a consistent user interface, DESQview wants its own menus (and other visuals) to always be displayed in their normal colors—which you can configure (see **Appendix A**). So, when you tap the DESQ key, DESQview changes the palette to the normal one for DESQview with the result that the colors of other windows may change. This is temporary and harmless.

As soon as you switch back to the program, its normal color palette will be restored. With VGA adapters, the palette is saved and restored on modes DESQview supports (See *page 256*.) With EGA this is not always possible, particularly if the program writes directly to the screen. If you are experiencing a palette change you do not like in a window running a text (not graphics) program, you may change the colors from the Rearrange menu. Also, investigate the use of the DESQview Palette program. See *pages 88* and *189* for more information on these options.

If a Program Bleeds Through Into Other Windows

If a program bleeds through (shows through) into other windows, or leaves bits of text lying around in odd places on the screen, it is most likely that the program writes directly to the screen rather than going through DOS or the ROM BIOS. To determine if this is the case:

- **Run Change a Program for the program and check if the Writes text directly to screen option is turned OFF (N). If it is not, turn it OFF. Also, turn Virtualize text/graphics OFF (N), and make sure Starting Height, Starting Width, Starting Row and Starting Column are blank.**
- **Start up the program again, paying close attention to what happens on the screen. DESQview first opens a small window on the screen and the program begins to load.**
- **If the window frame is overwritten when the program starts up, the program does, in fact, write directly to the screen. Run Change a Program again and turn the Writes text directly to screen option ON.**

When you turn ON the **Writes text directly to screen** option, the **Runs in Background** option is also turned OFF (logically) for 8088, 8086, 80286 computers and for 80386 computers where the program is not virtualized—if it has been left blank. Normally, this is what you want. Sometimes, however, it is desirable to let a program that writes directly to the screen run in background. For example, if your database program sorts for an hour without writing on the screen, then writes DONE, it might be worth tolerating the fact that DONE bleeds through to get the advantage of sorting in background. If you are running DESQview 386 you can virtualize programs which write text directly to the screen and graphics programs, which always write directly to the screen. (See *page 176* and **Appendix K**, *More About Virtualization.*) If you are using DESQview 386, you may also wish to set the Virtualize Text/Graphics option to Y or T.

About DESQview Windows

The default window sizes for DESQview windows are configured by running DESQview Setup and selecting Window Positions.

If you wish to change any of these window sizes and/or positions, enter the new coordinates. You can also change the color of DOS Text windows that have **Uses its own Colors** set to N in the DVP using DESQview Setup/Colors. You can also change the color of such a window on the fly by choosing Rearrange/Color from the DESQview menu.

Starting a Program in 43 or 50-Line Mode

You can force a program to open full screen and in the 43 or 50 lines supported by your video adapter by setting **Starting Height** to the number of lines desired for text modes of EGA or VGA adapters. Setting this value will cause DESQview to switch the display to the proper mode when the window is opened, as well as when you switch back to it. You must also have **Uses its own colors** set to Y. Both **Starting Height** and **Maximum Height** values should be set to 43 for EGA and 50 for VGA. If **Writes Text Directly to Screen** is set to Y and **Virtualize Text/Graphics** is set to N, the program itself sets the number of lines.

Starting a Program Full Screen

When you install a program listed on the Add a Program menu whose **Writes text directly to screen** option is turned OFF (set to N), or both **Writes direct** and **Virtualize** is ON (meaning that it can run in a small window), DESQview will configure the program to open in a small window. To make it open in a full-screen window instead, display the Change a Program menu and set Starting Height/Width/Row/Column to 25,80,0,0.

If a Curtain Suddenly Covers Up Your Screen

If a mesh-like curtain appears over the graphics information on your screen when you tap the DESQ key, nothing is wrong. DESQview just can't display the graphics and whatever else you may be trying to display at the same time. The graphics information is still intact but just can't be seen simultaneously with information in other windows. It will reappear when you switch back to the program.

There can be several reasons why DESQview may have invoked the graphics curtain:

- Virtualization fails if a video driver is not loaded. Check DESQview Setup to make sure the right video driver is loaded.
- There may not be enough expanded memory to save the graphics screen.
- If you are using DESQview 386 and you have the QEMM parameter FRAME=NONE, graphics cannot be virtualized .
- There may be two graphics programs on the screen in different modes and DESQview can't display them both in the same mode.
- You may have had the **Do you want Text and Graphics Displayed at the Same Time?** option in Setup/Video set to **N**.
- The program which displayed the graphics information may be using a display mode that DESQview does not fully support. (See *page 256.*) Because DESQview does not support the mode the program was using to display information, DESQview cannot display its menus, or let other programs run in this mode.

Also see the section of **Appendix A** entitled ***Advanced Setup: Video.***

Lotus 1-2-3 Release 3

In order to run Release 3 in a small window or in the background, you must have an 80386 machine with QEMM installed. 1-2-3 must be in text mode. However, on EGA and VGA displays, Lotus' default configuration will run 1-2-3 in graphics mode to display both spreadsheets and graphs. DESQview 386 cannot virtualize protected mode graphics as it can standard DOS graphics. (See **Appendix K,** ***More About Virtualization.***)

If you want Release 3 to run in a small window, from inside Lotus 1-2-3, configure a video driver set that looks for a CGA text driver and an EGA or VGA graphics driver. Creating alternate video driver sets will enable you to change the video mode as needed to run 1-2-3 either in a window or full screen only.

The CGA driver will run the standard spreadsheet display in text mode, which can be virtualized. Since Lotus allows you to switch video drivers on the fly by typing /, **W**(orksheet), **W**(indow), **D**(isplay), and selecting a driver, it is possible to start with a default graphics or text display and switch the display when you need graphics, or want windowing capabilities.

To virtualize Release 3's text display, the field **Virtualize text/graphics** in the Change a Program menu for Release 3 must be set to **T** (Text).

Using Several Copies of the Same Program in DESQview

You may install as many versions of the same program in DESQview as you want. The technique is identical to that described in the section on cloning a Big DOS Window on *page 246*. To create a new Open Window entry from an existing entry, run Change a Program and modify **Keys to Use on Open Menu**. When you modify this field, DESQview creates a new DVP and menu entry, with the new keys you specified, but otherwise retains all the original settings. We also recommend you change Program Name so you can tell the different entries apart.

For those programs which support and require file locking, use DOS SHARE and load it before DESQview. DESQview does not implement any file locking on its own.

When you run two or more copies of the same program, be aware that some programs use fixed file names for data or temporary files. If your program does this, running two copies will almost certainly fail. A common solution to this problem is to run each copy from a separate directory.

Backing Up Files Under DESQview

When you use a backup program, be sure that all files being backed up are closed and not in use by programs running in other windows. If a backup is performed on an open file, for example, LETTER, the copy of LETTER on the backup diskette will have a length of zero. If you later restore this diskette, any existing LETTER file will be destroyed.

CHKDSK - A Warning

Never use CHKDSK with the /F parameter in a DESQview window unless you have first closed all the files in all other windows. Programs often create temporary files when they are running. CHKDSK /F may collect and destroy these files.

CHKDSK can be safely used without the /F parameter. But, the **total bytes memory** value will be incorrect on versions of DOS earlier than version 5 and the **bytes free** value will indicate the number of free bytes in the current window, only **not** the total remaining memory available to load programs. The various disk space values will be correct.

If you find SWAP????.DV files on your hard disk

Whenever you quit DESQview normally, it will automatically erase any swap files from your hard disk. Swap files are written to disk if you specified a swap disk (rather than swapping to expanded memory or a RAM disk) in Setup—or if there was not enough room in expanded memory or on the RAM DISK (See **Appendix A**).

If you exit DESQview abnormally, such as with a system failure or by turning off the computer without exiting your programs or DESQview, you may find SWAP????.DV files (where ???? stands for random characters) on your hard disk. Depending on the amount of space needed to save a program's environment when it is swapped out, these files can be quite large. Outside of DESQview you can delete any SWAP????.DV files from your hard disk. They cannot be used for any program or data recovery.

Do not delete swap files while you are in DESQview; they may be currently in use.

Files Named DESQTMP?.* are Rerouted

If you name files so that the first seven characters are **DESQTMP**, DESQview will always write them to and read them from the drive and directory from which you start up DESQview (most commonly, C:\DV) regardless of any drive or directory specified. This allows two programs, running in different directories, to exchange information, using a consistent directory. This is as useful interactively as you find ways to use it; but for scripts that exchange files between programs running in DESQview windows, it is a boon. You can use DESQTMP?.* files as a set of disk-based clipboards to transfer text between programs consistently.

For example, if you are running 1-2-3 in the LOTUS directory and WordPerfect in the WORDPERF directory, you could transfer a file from 1-2-3 to WordPerfect without regard to directory usage:

- **Use the 1-2-3 Print command to print the information you want to transfer to a file named DESQTMP.PRN.**
- **Then, switch to WordPerfect and read in DESQTMP.PRN as an ASCII text file.**

Since the string, DESQTMP, is only seven characters long, you can add one character to the file name and also use different extensions, for instance DESQTMP1, DESQTMP2.TXT DESQTMP8.PRN, DESQTMP5.WK1, etc., giving you many file names to work with. Remember that the program itself, not DESQview, is copying the file, so it may or may not append to a file of the same name or overwrite it, for example. DESQview merely detours the file to DESQview's own directory and does not interfere with how the program reads or writes the file in any other way.

Keyboard and Learn Problems

The following sections are intended to provide insight into DESQview keyboard handling and solutions to keyboard or macro problems you might encounter.

In general, DESQview works perfectly with programs that use the BIOS interface to the keyboard buffer, which are most DOS programs. However, if a program accesses the keyboard buffer directly, bypassing the BIOS completely, or bypasses the keyboard buffer itself, DESQview cannot properly manage the keystrokes. Such a program may grab other windows' keystrokes or throw away played-back or transferred keystrokes. In some cases, setting a Keyboard Conflict (see ***page 190***) in the DVP associated with the program can remedy a keyboard problem. In the case of Microsoft Windows, which bypasses the keyboard buffer entirely, you cannot mark and transfer keystrokes nor use Learn.

Learn does not memorize mouse clicks, only keystrokes.

If Numlock is on in Every Window

You may have thought you turned NumLock off only to switch windows and find NumLock on again. This happens if you have **Maintain separate shift states for each window?** set ON (Y) in DESQview Setup and NumLock (or any other toggle shift state key such as CapsLock or Ins) was engaged when you started DESQview. Most PCs boot up with NumLock on so if you decline to turn NumLock off, DESQview will start with NumLock engaged.

Some types of programs, such as terminal emulation programs, require separate shift states as a remedial condition, but if you are not using a program that requires separate shift states, you can change this in DESQview Setup if you wish. If you have separate shift states set OFF in Setup, the way the NumLock, Shift, CapsLock and ScrollLock keys are set for one program will be the same for all other open windows.

If one of the programs changes the state of any of these keys, it will be changed for all of them, which is why it is usually a convenience, and sometimes a remedy to have separate shift states set ON.

Beeping or Clicking

If your PC suddenly starts beeping every time you press a key, almost certainly you have forgotten to finish a script you started. (The beeps signal that you have filled up the Learn Scripts buffer. See **Chapter 5**.) Cancel the script by displaying the Learn menu and selecting Cancel.

If you were really creating a script, you need to increase the size of the Learn Scripts buffer and probably also change Script Buffer Size (see ***page 183***) if you are learning the script for a program, or the DESQview Scripts buffer size, if you are learning a script on the DESQview menu.

If you hear a click every time you press a key, you are probably learning a script. If you display the Learn menu, it will indicate **Learning**. If this is not what you wanted, cancel the Learn. (When you display the Learn menu again it indicates **Not Learning**.)

The keyboard may also be beeping if you try to type to a small window which is not virtualized. If you designate a program as virtualized, and it appears that it is **not** being virtualized, you probably do not have an alternate map available (see **Appendix K**, ***More About Virtualization***). Another reason virtualization can fail is if you run out of expanded memory.

If a Script Only Plays Back Part of the Keystrokes You Have Learned

If a script plays back only part of the keystrokes you have learned, then seems to skip or throw away other keystrokes, there are several possible reasons:

- ❑ **The program does not allow type-ahead**. Some programs throw away keystrokes if you type them too quickly, or while the program is performing a long operation, for example, reading a file.

Try using a Time Delay in the script. If a time delay does not help, run Change a Program and set the **Keyboard Conflict** level to a higher number. Different settings of Keyboard Conflict have different methods of handling keystrokes. See *page 190* for a more complete description of how to determine the correct Keyboard Conflict level. Keyboard Conflict 1 or 2 and other settings which incorporate them usually help type-ahead problems.

- ❑ **The keystroke sequence is not supported by Learn**. Learn can only learn legal keystrokes (see *If DESQview Will Not Let You Learn a Script on the Key You Want*, below, and **Appendix I**). If your program allows illegal (to DESQview) keystrokes (because it bypasses the ROM BIOS and manages the keyboard itself), the program will still work correctly in DESQview, but those keystrokes won't be recorded as part of a script.
- ❑ **The program is clearing the keyboard buffer**. Some programs arbitrarily discard anything that has been typed ahead at certain times, for example, as the program is starting or after an error has occurred. If this happens when a script is being played back, all the keystrokes after this point will be lost. The best solution to this problem is to use the Time Delay command to give the program time to get back in a state where it is ready to read keys again.

If DESQview Will Not Let You Learn a Script on the Key You Want

DESQview macros only support keys and key combinations that have unique BIOS scan codes. Not all keys, or combination of keys, are legal in the sense that the ROM BIOS recognizes them. The enhanced PC keyboard recognizes more keys than does a PC-XT or a PC-AT keyboard, but no keyboard recognizes all possible key combinations. For example, no standard keyboard recognizes Ctrl-Esc or Ctrl-Alt-X. Also, some system keys, although recognized, cannot be redefined, for example, Ctrl-NumLock, Pause, Print Screen, SysRq, and so forth.

If nothing happens when you respond to the **Press the Key You Want to Redefine** message, that key or key combination cannot be redefined or learned as part of a script (also see **Appendix I**).

If You Cannot Learn or Play Back Any Script

Be sure Learn is enabled in DESQview Setup. Note that if DESQview is started with the /NOSETUP switch, Learn is disabled.

If Learn Will Not Work With a Program

If you start a Learn, but the script you create does not do anything when you play it back, the program that you learned the script for may bypass the BIOS keyboard mechanism and read the keyboard directly. (Other keyboard enhancers such as ProKey, SuperKey, and so forth, also will not work with such a program.)

Some programs can be set up to be compatible with keystroke enhancers. Check your program's manual. If so, this will probably make it work with DESQview Learn. If not, there is nothing you can do to use Learn.

QuarterdeckTechnical Support

Technical support is available by telephone, FAX, mail, Quarterdeck BBS, CompuServe, Internet and BIX as well as other BBS networks we support. We have a FAX service that dispenses technical notes on specific subjects and special drivers and patches on our BBS. For the current telephone numbers, login directions and other details, please see the Passport booklet that came with your DESQview package.

If you call, FAX or write us, you will need:

- ☐ Your DESQview or DESQview 386 serial number. A valid DESQview or DESQview 386 serial number is necessary for technical support.
- ☐ We also need to know the contents of your AUTOEXEC.BAT and CONFIG.SYS files.

We usually also need to know about your hardware, so please be ready to supply:

- ☐ The name and model of your computer, video card and disk drive.
- ☐ The amount and type of memory you have.

Please be at your computer when you call and be ready to recreate the problem. Have available the manuals for any add-on cards installed in your computer. That will help both of us get your problem solved sooner.

Command Line Switches for DESQview

The following DESQview command line switches should be used with caution. They are for remedial use only and to experiment with them for usage other than the documented purpose may be inviting problems. If one or more command line switches apply to your particular problem, try them one at a time to see if they help.

The switches should be placed after the command you use to start DESQview. You may use the entire string or the abbreviation which follows it (without the parentheses). The slash (/) is required syntax in either case.

/NOSETUP (/NS) This switch causes DESQview to ignore the DVSETUP.DV file (which contains all of the information provided by the DESQview Setup program). Without the setup file, no graphics driver is loaded, Optimize Communications is set to N (OFF) and no mouse is supported and all other Setup options are set to their most innocuous values. The /NOSETUP switch also prevents LEARN.DVR from loading. This disables playback and learning of scripts. This switch is used mostly to diagnose startup errors.

/OLDKEYBOARD (/OK) This switch tells DESQview to make the old-style interrupt 16h test/wait-for-input calls (functions 0, 1) instead of the new-style calls (functions 10h, 11h) to get its keys. This is necessary for a BIOS that erroneously claims it supports the new keyboard calls. It is also necessary for compatibility with keyboard enhancers and keyboard monitors that do not support the new calls.

/LOCKOUTDISK (/LD) This switch helps avoid **Disk Drive Not Ready** errors for certain hard disk controllers. It disallows task switching during the entire time an INT 13h (disk request interrupt) is running. This switch may also help avoid long delays while reading a disk on some controllers, even if you do not see an error.

/DOSTERMINATE (/DT) This switch lets DOS do the closing of files. By default, DESQview terminates applications without calling DOS to do it. This is considered consistent since we do not let DOS open files unless you specify it. However, some networks and TSRs cannot keep track of open file handles if they see a terminate without a corresponding load. Some DOS utilities (most notably SHARE) and some networks will not be able to keep track of open files if they do not see DOS terminates. Try this switch if you are getting sharing violations or if files which would normally be closed are left open when a program terminates.

/CODEVIEW (/CV) This switch causes DESQview to be more compatible with the Codeview debugging environment. It has the following effects:

- ❑ DESQview will return keys to interrupt 16h requests even if the task making the request has an open keyboard object in a window above it.
- ❑ When a program waits for input and no keyboard input is pending, DESQview will PAUSE and retry, rather than stopping the program.
- ❑ DESQview will allow video BIOS calls for background windows to go through to the BIOS, rather than handling them itself.

All these behaviors are inconsistent with the standard DESQview environment, but are necessary to let Codeview debug multi-window programs.

/EXCLUDE:mmmm-nnnn (**/X**=mmmm-nnnn) This switch takes one or more segment ranges (in hex) to exclude from DESQview's use. It is necessary if the expanded memory manager has allowed other programs to map any pages which conflict with some device in the system. Preferably, to correct this, the pages should be excluded from use by the expanded memory

Command Line Switches (cont'd)

manager when it is loaded in CONFIG.SYS, rather than from DESQview 386 at run time. If your memory manager excludes the area of memory, then no other software can ever map any memory to the excluded area. (It is reasonable to assume that if DESQview should not map there, then nothing else should, either, however you may not have encountered anything else causing a conflict until you ran DESQview. This does not mean that nothing else ever will.) Also, it will always be excluded from DESQview as well, no matter how DESQview is started.

/LIST (/L) This switch causes XDV.COM to list out the areas into which it is loading DESQview, and how much of DESQview is being loaded into each area.

/DELAYMSMOUSE:Y (/DM=Y) This switch causes DESQview to delay calling a program's asynchronous Microsoft mouse handler until a time when the handler can do anything it wants (i.e. pop up, etc.) This causes programs such as Mouse Perfect to work reliably, but since it really does delay the mouse handler, it can cause sluggish mousing, particularly on slower computers.

QEXT Parameters

The following are command line parameters for QEXT.SYS (See **Appendix A**). If you are having difficulty with QEXT or have special needs, one or more of these QEXT options may help. For QEMM parameters, see your QEMM documentation.

BLOCKSIZE:xxxxx specifies the block size, in bytes, of memory transfers to and from extended memory blocks. Legal values for xxxxx range from 2 to 65535. EMB transfers go through the BIOS extended memory support routines. These routines lock out interrupts during their operation. This interrupt lockout may be unacceptable for large memory transfers done with one request. QEXT will break up large memory transfer requests according to the block size you specify.

EXTMEM:xxxxx, (EXT), specifies the amount of extended memory which should not be used by QEXT.SYS. xxxxx must be in the range 1 to 15360 representing an allocation of 1K to 15360K. This parameter is useful when using RAM disks or disk cache utilities which use extended memory through the old BIOS interface, since you can ask QEXT to "leave alone" the memory needed. Without the EXTMEM parameter, QEXT uses all the extended memory it can find.

HANDLES:xxx, (HA), specifies the number of EMB handles available. xxx must be in the range 16 to 255. Each application which uses EMBs requires at least one handle. Some applications require more. The default is 32 which should be adequate for most purposes. Larger values increase the amount of memory used by QEXT. Each HANDLE requires 20 bytes of memory.

HMAMIN:xx specifies the minimum amount of memory, in kilobytes, that a program which uses the HMA can request. Legal values of xx range from 0 to 63. Since only one program can use the HMA while several programs might want to use it, this parameter only allows a program which uses at least xxK of memory in the HMA. The parameter is not necessary if you have only one program which uses the HMA, such as DESQview.

MEMORY:xxxxx, (ME or MEM), specifies the amount of extended memory that QEXT makes available as extended memory blocks. xxxxx should be in the range 128 to 32128, representing an allocation of 128K to 32128K. If the MEMORY parameter is omitted, QEXT takes all of the available extended memory.

NOXMS instructs QEXT not to be an extended memory manager. Normally QEXT provides extended memory specification (XMS) services. With this parameter, QEXT still supplies the DESQview interface.

UNUSUAL8042, (U8), specifies that the computer has a non-standard 8042 keyboard controller. If running DESQview (or some other program) disables the keyboard then the UNUSUAL8042 switch should be specified.

VDISKVERSION:x.xx, (VD) Use this parameter to tell QEXT your actual VDISK version number, when it is different from your DOS version number. VDISK identifies its version number when it starts up.

NOPAUSEONERROR, (NOPE), does not pause on an error. QEXT usually displays a **Press any key to continue, ESC to abort** message after parsing command line instructions if there are parameter errors. This instructs QEXT.SYS to not display the message. When an instruction causes QEXT.SYS to generate the above error, and when the error generated has been shown to not cause any disruption of the system, use the NOPE instruction.

PAUSE tells QEXT.SYS to pause the display when it starts up. The PAUSE command permits you to hit the Esc key to stop QEXT.SYS from installing. This is useful when trying out new parameters, so you can abort the load if there was an error. Note that if there is an error on the QEXT.SYS command line, QEXT will automatically pause to show you the source of the error.

HELP displays all QEXT.SYS parameters and a one line description of what each does.

? displays a list of all QEXT.SYS command line parameters and where appropriate, the abbreviation for the parameter.

Error Messages

This appendix lists all the major error messages generated by DESQview. Minor error messages that are completely self-explanatory are excluded. For trivial errors, DESQview generally just beeps—without displaying a message. For example, DESQview beeps if you try to switch to a nonexistent window or to select a command that is not currently available.

If you get an error message that is not listed in this appendix, and whose meaning is not obvious, it may be coming from DOS or from one of your programs. Refer to the **error message** section of your DOS manual, or the appropriate program manual, for help in interpreting this message.

DESQview has three types of error messages: load messages, startup messages, and system messages.

Load Messages

Load messages occur when you start up DESQview or select a program to start up from the Open Window menu—and indicate the reason that the program was **not loaded**. These messages occur only when DESQview loads a program. If the program is loaded by DOS (identified by the presence of the DOS copyright notice), any messages that occur come from DOS, not DESQview.

After you solve the problem, close the window to remove the message. To close the window, type **EXIT**.

If the window does not remain on the screen, but just flashes on momentarily, turn OFF the **Close on exit** option and try again. This will enable you to see any error message DOS or the program may have written in the window when the load was terminated. When you solve the problem, turn it back ON (if it was ON originally).

```
DESQview is already running.
```

You have tried to start up DESQview again, even though it is already running. You cannot run DESQview inside of a DESQview window.

```
Cannot read DESQview Setup file—using defaults.
```

The file **DVSETUP.DV** (see **Appendix G**) —which contains all the information about how DESQview should configure your system when it starts up (see **Appendix A**)—could not be read. So, the default configuration was used instead.

See ***Problems Accessing DESQview Files*** on ***page 274*** for more information. If you decide the **DVSETUP.DV** file is corrupted, delete it and then run the Setup program to create a new **DVSETUP.DV** file.

```
Program too big to fit in memory.
```

See **Appendix E**, ***DESQview Tips and Troubleshooting Guide*** for suggestions in overcoming program startup problems of this nature.

```
File not found.
```

DESQview was not able to find the file in the path you specified on the Program line of the Change A Program Menu. Also, the filename or extension may have been misspelled. You may have specified an .EXE file when the load file is actually a .COM file.

```
Path to load file not found.
```

DESQview was not able to find the path you specified on the Program line of the Change A Program Menu.

Unknown DOS error loading file.

DESQview was not able to interpret an error that DOS has returned trying to load the file.

Access denied to load file.

DESQview was unable to find or access the program file, and thus was unable to load the program. See ***Problems Accessing Program Files*** on ***page 274*** for more information.

This Program requires a later version of DESQview.
Press Esc to exit.

The DESQview-aware program you are trying to run requires a later version of DESQview.

Shared program initialization error.
Press Esc to terminate program.

A shared program cannot be initialized by DESQview. We recommend you report this problem to the program's developer.

Cannot find "shared program" file.

DESQview was unable to find the "shared program" file. See ***Problems Accessing Program Files*** on ***page 274*** for more information—except, the program name is specified by **Shared Program Pathname** rather than **Program** and the data directory information is specified by **Shared Program Data** rather than **Directory.**

Missing (or bad) DESQview file:
FILENAME.EXT

The DESQview command you performed tried to read the indicated DESQview file, but could not.

See ***Problems Accessing DESQview Files*** on ***page 274*** for more information. If the indicated file is bad, delete it and then reinstall DESQview. There is no harm in reinstalling DESQview over the same version of an existing system.

Sometimes, loading memory-resident programs prior to starting up DESQview, or allocating too few DOS file handles (by the FILES command in your CONFIG.SYS file), can cause this error. Also, if DESQview cannot find the .DVO (Open Window Menu) file this message will appear as a Startup Message (see below).

Startup Messages

Startup messages occur when you select a program to start up from the Open Window menu, or when you try to perform a DESQview command (such as **Help for DESQview**) that accesses a DESQview file. They indicate that the program was **not loaded** or that the command was **not performed**.

Startup messages differ from load messages in that the problem is a lack of DESQview or system resources rather than the inability to load the program. To remove the message and continue, press the Esc key.

A non-swappable window is in the way.

There is not enough unused program memory left to load the program you selected—because there is a window in the way whose **Can be swapped out of memory** option is turned OFF. To run this program, close down all your nonswappable programs and then try again.

Insufficient room for shared memory.

DESQview has encountered a problem allocating additional shared memory for the program.

Not enough DESQview "common" memory.

There is not enough unused "common" memory left to start up the program you selected. To perform this command the way your programs and windows are currently configured, you must increase the size of the Common Memory buffer. See ***Increasing the Amount of Common Memory*** on ***page* 274** for more information.

Insufficient memory to open that program. The block of memory available to a program in this configuration of DESQview is (nn) K. PROGRAM NAME is configured with a "Memory Size" of (nn) K plus (nn) K of other memory overhead.

The total amount of unused program memory (in the 0K-640K area) is less than that specified in the DESQview program information file (DVP) for the program you selected.

See if your program can run with less memory than what is currently being allocated to it. Use the Change a Program command to decrease the **Memory Size (in K)** for the program. Alternatively, see if you can increase the amount of program memory DESQview can make available for your programs (see **Appendix E**).

Not enough room on disk for swap files

There is not enough room on the SWAP disk you specified (see **Appendix A**) to save the program DESQview is trying to swap out.

If you have set up DESQview to swap to expanded Memory, and expanded memory is too full to swap there, DESQview will attempt to swap to disk.

To correct the problem, erase some unneeded files from the appropriate RAM disk or hard disk.

System Messages

System messages occur when a program (running either in foreground or background) encounters a DOS error or requires DESQview resources that are not available. In general, these messages give you the choice of either taking corrective action and continuing, or of terminating the program.

```
Swapping...
```

This is an advisory message. It means DESQview is in the process of swapping a program or a "graphics screen" to disk, RAM disk, or expanded memory. It disappears automatically when swapping is finished.

```
Control break pressed!
Select:  Abort  Continue
```

DESQview has detected the Ctrl-Break key combination and needs to know whether you wish to abort the program or macro running or to pass the Ctrl-Break to the program's own error trapping system.

```
A disk error has occurred on drive (n).
Select:  Retry  Abort  Ignore
```

A DOS error has occurred while the program was reading or writing to the specified drive. Select **Retry** a few times to see if the problem goes away. If not, select **Ignore** or **Abort.** (**Ignore** causes data to be skipped, but can be useful in some cases—for example, to continue copying a group of files with one bad file.)

This message can also occur when there is a problem accessing a hard drive or a network drive. Select **Retry** to continue. If unsuccessful, you may have a hardware or network problem.

```
An unrecognized DOS error has occurred (nn).
Select:  Retry  Abort  Ignore
```

DOS has returned an error code (**nn**) not recognized by DESQview. Check your DOS manual for more information.

```
Disk drive (n) is not ready.
Select:  Retry  Abort  Ignore
```

Either there is no diskette in the specified drive or the drive door is open. Correct the problem and select **Retry.**

```
Make sure that you've placed the program diskette
in the floppy drive.
Select:  Ready  Abort
```

This message reminds you to put the program diskette in drive A. Insert the diskette and select **Ready**. This message only appears if the **Requires floppy diskette** option is ON. If you don't want the message, turn this option OFF from the Change a Program menu.

```
The diskette in drive (n) is write-protected.
Select:  Retry  Abort  Ignore
```

The program has tried to write to a diskette in the specified drive—but that diskette has a write-protected tab on it. Remove the tab or use a diskette without such a tab.

```
Not enough "system" memory for program. Try
closing other windows and selecting "Retry." (Use
Change a Program to allocate more.)
Select:  Retry  Abort
```

The program feature you just used requires DESQview to allocate memory from the program's system memory area—but the needed amount is not available. And, there is not enough DESQview common memory available to use instead.

See *Increasing the Amount of Common Memory* at the end of this section for information on ways to recover some common memory and then select **Retry** to cause the program to try again to get the system memory it needs—from the common memory area. If you select **Abort,** the program will be closed down. Also see *Increasing the Amount of System Memory* on *page 274.*

```
Please use Change a Program to allocate more
"system" memory for this program before you run
it again.
        Press ESC to continue
```

The program feature you just used requires DESQview to allocate memory from the program's system memory area—but the needed amount is not available. This time, however, DESQview was able to satisfy the request by allocating some of its own common memory instead. See ***Increasing the Amount of System Memory*** on ***page*** 274 for more information.

```
Not enough DESQview "common" memory. Try
closing other windows and select "Retry."
(Run the Setup program to allocate more).
 Select:  Retry  Abort
```

The program has requested that DESQview allocate some common memory to it—but the needed amount is not available. See ***Increasing the Amount of Common Memory*** on ***page*** 274 for information on ways to recover some common memory and then select **Retry** to cause the program to try again. If you select **Abort,** the program will be closed down.

```
Programming error. Program must be terminated.
Report this problem to the program's developer.
       Press Esc to abort program.
```

The program has made an invalid DESQview API request. Press Esc to try to abort the program and continue running. However, this error can sometimes be fatal to DESQview—depending on the nature of the invalid request. We recommend that you report this problem to the program's developer.

This message may also occur for a DESQview oblivious program to trap a bug that could possibly (or might already) have damaged the system. Abort whatever you are doing and reboot.

Error Message Notes

Increasing the Amount of Common Memory

Common memory is the area where DESQview stores all the information it needs to manage programs and windows. Memory in this area is allocated and deallocated on an as needed basis. In particular, when a program is started up, common memory is allocated to it and when it is closed down that memory is deallocated. So, a way to increase available common memory is to close down one or more programs.

DESQview also stores marked text in common memory. You can void the mark buffer by selecting Mark Begin from the Mark menu, and pressing Esc.

Your current problem with common memory may only be a transient effect of the current configuration of windows you have open, and may not reoccur. However, if you get common memory errors often, you should increase the size of the Common Memory buffer by quitting DESQview, running the Setup program, and changing **Common Memory** (see **Appendix A**).

Increasing the Amount of System Memory

System memory is the area of memory where information specific to the program is stored. In general, all the system memory for a program is allocated at the time the program starts up. An exception is programs written expressly for DESQview, which may allocate and deallocate system memory when you use a particular program feature.

A system memory problem does not go away, like a common memory problem often does. It will reoccur every time you use the program feature that caused it to happen. So, you should use Change a Program to increase **System Memory (in K)**. Add 1K-2K and try again until the problem goes away.

Problems Accessing DESQview Files

When you install DESQview, all of DESQview's files are placed in a single directory on your hard disk—most commonly, **C:\DV**. **When you start up DESQview, you must set the default drive and directory to C:\DV** or DESQview won't be able to find the files it needs. The DV.BAT file created when you installed DESQview will automatically change to the DV directory before it starts DESQview, if you use it.

This error has most likely occurred because you started up DESQview when the default drive or directory was not set to **C:\DV**. So, first, verify that the drive and directory were correct when you started up DESQview. Then, verify that the indicated file is on this drive and directory.

If everything seems correct, the file may be damaged. Try replacing it as indicated for the particular message.

Problems Accessing Program Files

When DESQview tries to load a program, it determines where to find the program file by examining the **Program** and **Directory** entries on the Change a Program menu for the program. See **Chapter 7**, ***page 173, Controlling How a Program is Loaded,*** for information.

If DOS loads the program any error message is generated by DOS rather than DESQview.

Double check the spelling of the program file name and be sure that it has the proper file extension, **BAT, COM,** or **EXE.** If the extension is **COM,** and **EXE** is specified (or vice versa), the load will fail. (If program files with both extensions are available, use **COM**.)

If everything seems correct, the file may be damaged. Try quitting DESQview and checking if the program can be started up outside of DESQview by performing the command in **Program** according to the above rules. If not, you must reinstall the program on your system.

G

More About DESQview's Files

When you install DESQview, the installation program creates the **DV** directory on your hard disk and installs all DESQview's files in this directory. This appendix summarizes the files on the master DESQview diskette and the files in the **DV** directory after you have installed DESQview.

The following files occur on the master DESQview diskette, but do not appear in the **DV** directory after DESQview is installed:

- The ***.QIP** and **INSTALL.EXE** files used to install DESQview.

The following files are copied to, or created in, the **DV** directory and constitute the complete set of files DESQview needs to run:

- The files that constitute DESQview itself:

  The **DV.EXE** file, which is the DESQview program itself.

  The **DVREG.COM** file, which holds your registration information.

  The **DESQVIEW.DIR** file, which contains all the information about the programs that appear on the Add a Program menu, and that is used by **AUTOINST** (see ***note 2*** on ***page 21***) to automatically install programs.

  The **DESQVIEW.DVH** file, which contains DESQview's Help information.

  The **DESQVIEW.DVO**† file, which contains the information for the Open Window menu.

  The **DESQVIEW.DVS**† file (if any), which contains all the scripts you have created on DESQview menus.

  The **DVSETUP.DV**† file, which contains the setup information determined by the DESQview Setup program.

  The **DVWINMON.EXE** file is a program which supplements DESQview's ability to save and restore Microsoft Windows version 3 graphics screens.

  The **NWCAST.EXE** file, which is a network-only program that manages messages broadcast with Novell's SEND command.

  The **QEXT.SYS** file, which is a special driver that DESQview uses to load a 64K part of itself into extended memory, if you have it (see **Appendix B**).

  The **XDV.COM** file, which contains a special loader that DESQview uses to load parts of itself into expanded memory, if you have it (see ***Installation Note 2, Page 21*** and **Appendix B**).

---

† You should back up this file regularly, it contains information that has been customized to your particular system.

The ***.DVR** files, which are the drivers DESQview uses to configure itself for your hardware.

INSTLAC.HLP, The help file for Add/Change a Program.

- The files that implement built-in DESQview features:

The built-in DESQview programs themselves:

CONVSCR.COM	The Convert a Script program (see **Appendix I).**
DOSSERV.EXE	The DOS Services program (see **Chapter 4**).
INSTLAC.EXE	The file that runs Add a Program/Change a Program.
MS.COM	The Memory Status program (see **Appendix B**).
DVSETUP.COM	The DESQview Setup program.
DVPAL.COM	The DESQview Palette program.
SETUP.BAT/ SETUP.DVP	The supporting DESQview Setup program files (see **Appendix A).**

The **AUTOINST.COM** file, which is the program that automatically installs programs on a hard disk (see ***note 4*** on ***page 21***).

The **DVHERC.COM** file, which is a program used to manage the screen for certain Hercules-compatible display adapter boards (see ***page 184***).

The **SAMPLE.PLB** and **SAMPLE.COM** files, which are the sample document and spreadsheet used in **Chapter 2**, ***Getting Started:A Tutorial***, and the program that loads these documents.

DVANSI.COM, the DESQview ANSI.SYS replacement. DVANSI.COM is a TSR. To load it, type DVANSI.

DEVICE.COM is a device driver loader can be used to load certain device drivers in a window. You will get a message indicating failure if a particular device driver (typically block type devices) cannot be loaded by DEVICE.COM, in which case you have to load it in CONFIG.SYS.

Use DEVICE.COM with the syntax:

DEVICE <driverfilename>

In addition there may be a file named READ.ME on your DESQview disk(s), which would contain information not available when the manual was printed.

- The complete set of files DESQview keeps for each program:

The **??-PIF.DVP**[†] file, which contains the DESQview Program Information File (DVP) for the program—that is, the information on the Change a Program menu for the program (see **Chapter 7, *Changing a Program's Information***).

[†] You should back up this file regularly, it contains information that has been customized to your particular system.

The **??-SCRIP.DVS**[†] file (if any), which contains all the scripts (keystroke macros) you have created for the program using DESQview's Learn feature (see ***pages 145-146***).

The **??-LOAD.COM** or **xx-LOAD.EXE** file (if any), which contains the custom DESQview "loader" that (usually) allows programs that write directly to the screen to run in small windows, and may overcome other program limitations or provide additional program capabilities—such as the ability to use a mouse in the program (see ***page 170*** and **Appendix H**).

- ❑ Also, the file **DV.BAT** is placed in the root directory of the hard disk or diskette on which you install DESQview so you can start up DESQview any time you want just by typing **DV** (assuming your default path includes the root directory).

After you have used DESQview, you may also find files with a **.BAK** extension, which are backups of program information files, DVSETUP and script files. These files are created when you modify program information, setup information or DESQview scripts.

If you are interested in the minimum configuration of files required to run DESQview, this is discussed, with various alternatives, in **Appendix D, *Using DESQview With a Floppy-Based System.***

The files for DESQview and DESQview 386 are the same; the code that is executed in either case is different.

[†] You should back up this file regularly, it contains information that has been customized to your particular system.

Notes:

More About What Programs Run in DESQview

Most programs that run under DOS will run in DESQview. In general, programs that interface to the hardware using DOS or ROM BIOS calls will run more successfully in DESQview than programs that deal directly with the hardware. However, Quarterdeck has made every effort to accommodate the anomalous behavior of all programs we have evaluated.

Potential incompatibilities between programs and DESQview can be grouped into the following categories: memory management, screen management, and keyboard management.

Memory Management

Programs are expected to conform to the standard DOS conventions for determining their memory size and their location in memory. They should either inspect offset 02H in their program prefix or use the ROM BIOS memory check call (interrupt 12H) to find the maximum address they are allowed to reference. If a program assumes that it will run in a particular area of memory or that it can use memory above that allowed by DOS, it will not run in DESQview. (See **Appendix B** for information on programs that use EMS or EEMS memory).

Screen Management

DESQview can manage screen writes in small windows and in background under the following three circumstances:

- Programs that display character-based information on the screen by calling DOS or the ROM BIOS run in small DESQview windows and in background.
- Programs that are DESQview aware, meaning they are customized for DESQview by the program developer or by Quarterdeck, will run in small windows and in background.
- Programs running inside DESQview 386 which can be virtualized (See Appendix K) can run in small windows and background.

Otherwise programs can run in full-screen-only windows only and **cannot** run in background. This includes programs that write directly to the screen which are running on 8088, 8086 or 80286 and higher PCs. Although you cannot **run** a full-screen-only program in a small window, you can **view** (and scroll) the program in a small window. When you place a full-screen-only program in a small window, it is suspended until you zoom it back to full-screen.

If a program switches into graphics mode, it should do so using the standard ROM BIOS interrupt 10H interface and must be installed with the **Displays graphics information** option set to ON. While in graphics mode, if the program is not being virtualized, it runs in a full-screen-only window. If you place a full-screen-only graphics program in a small window, the graphics information can be viewed but the program will be suspended.

Printer Management

If two programs attempt to write to the same print device simultaneously, a conflict can arise. See **Appendix A** for information on how to set up DESQview to resolve such conflicts for you.

Keyboard Management

Programs that call DOS or the ROM BIOS to receive keyboard input can always learn scripts successfully. However, whether scripts play back properly depends on how the program handles **type-ahead.** Some programs always allow type-ahead, and some never allow it. The most common case is that type-ahead is allowed most of the time––such as when you are entering data—but not all of the time. You can control how DESQview handles type-ahead when it plays back a script by setting the **Keyboard Conflict** level.

Some programs bypass DOS and the ROM BIOS and read the keyboard directly. Such programs will often still run in DESQview, but you will be unable to learn or perform DESQview scripts or to transfer information into them. Set the **Keyboard Conflict** level to 4 or higher for such programs. See ***page 190*** for a discussion of each keyboard conflict setting.

File Management

DESQview does not interfere with normal DOS file operations except to map files named **DESQTMP?.*** to the **DV** directory. This is useful for creating mark and transfer scripts since it allows a program to write a file that always goes into a known directory, independently of the directory in which the program is running. Any program using standard DOS file management should run without problems in DESQview. You must be careful, however, that two programs do not use the same file at the same time or that a program, running in two different windows, does not use a fixed temporary file name.

Communications Management

Communications programs generally attach themselves directly to the communications port's interrupt vectors. DESQview does not interfere with these connections, thereby allowing the program to run in background. A program connected to these vectors should usually be installed with the **Can be swapped out of memory** option OFF (See **Appendix E,** ***page 252,*** for an exception to this). If **Uses Serial Ports** is set to **Y** (meaning all ports a program uses) or a specific COM port number, it will not be swapped out (unless specifically told to do so).

To help manage serial port communications, DESQview sets ROM BIOS locations 40H:00H and 40H:02H to zero for any program whose **Uses Serial Ports** option is set to NO. This indicates that communications ports 1 and 2 are unavailable. COM3 (40H:04H) and COM4 (40H:06H) are not hidden in this way. The correct port address values are left in place if this option is ON (Y, 1 or 2). If there is a problem with a program accessing an unwanted COM port, specify a particular port in the Change a Program menu. This will **hide** other COM ports from the program. This only works for programs which access the BIOS data area to determine the I/O address of the COM port and not for programs which use fixed I/O addresses. A program that directly accesses the hardware will find a serial port anyway.

If you use a communications program and also have a mouse that attaches to a communications port, you must be sure to attach each to a different port.

Notes:

Editing DESQview Scripts

The scripts you create using DESQview's Learn feature are written to disk in a special encoded format. They cannot be viewed or changed. Sometimes it is useful to be able to see these scripts, to edit them, or to create your own scipts directly—by typing in the keystrokes to the DESQview Notepad Companion or to a word processor. The Convert a Script program lets you do this.

Before you can use Convert a Script, however, you must install it in DESQview (see *Adding a Program, pages 100-103*). The program file is located on the drive and directory where you installed DESQview (most commonly, **C:\DV**).

Using the Convert A Script program

To run the Convert a Script program:

- **Display the Open Window menu and select Convert a Script.**

The Convert a Script window appears, asking you whether you want to convert a scripts file to a text file (**S**), a text file to a scripts file (**T**), or exit (**X**).

- **Type S and press ↵. Then, enter the name of the scripts file you want to convert to a text file and press ↵. Finally, enter the name you want to give to the converted text file and press ↵.**

The default name of a program's scripts file is **xx-SCRIPT.DVS**, where **xx** are the characters used to select the program from the Open Window menu—or, **DESQVIEW.DVS** for scripts for the DESQview menu.

- **Edit the text file using your favorite word processor. Save as an ASCII file (no formatting).**

- **Switch back to the Convert a Script window. Type T and press ↵. Enter the name of the text file you just edited and press ↵. Then, enter the name you want the scripts file to have (normally, its original name) and press ↵.**

As each line of the text file is converted to a scripts file, it is displayed in the Convert a Script window. If an error is found, processing stops after displaying the line containing the error—press any key to continue processing the rest of the file. Then, to load the modified scripts:

- **Switch back the program whose scripts you just edited and use the Load Scripts command to load the modified scripts (see *page 145*).**

Editing Scripts Using the Notepad Companion

If you have the Notepad Companion, you can edit scripts files directly. When you load a file with the extension **DVS** into Notepad, it automatically converts it into a text file—and then back to a scripts file when you save it.

- **Start up DESQview Notepad. Type N to select non-document mode. Then, enter the script name and press ↵.**

- **Modify or delete existing scripts, add new scripts, or both. Then, terminate editing by typing ^KD.**
- **Put the modified scripts into effect by re-loading the scripts file.**

How to Edit a Script File

When you convert a scripts file to a text file (or when you load a scripts file into DESQview Notepad), each script is converted into its textual representation, which can be edited and then converted back to scripts file format. The standard typewriter keys appear as themselves. All other keys are represented by the **key labels** delimited by curly brackets. The tables in the remainder of this appendix list the complete set of valid **key labels** and special Learn keys that DESQview recognizes. There can be any number of scripts in a scripts file.

Each script has the following 3 directives:

1. **{Learn** KEY "script name"} or:
   {Learn {key label} "script name"}
2. **keystrokes**
3. **{Finish}**

where:

- **KEY** is the actual typewriter key; **key label** is the name of the key being redefined. For example, **X** is the typewriter key, X (case significant); {**F6**} is the key label for the function key, F6; {**Alt-0**} is the key label for the Alt-O (case insignificant) combination keypress.
- **script name** is the name of the script as it should appear on the Display Scripts menu. The script name may have embedded blanks. The quotes are mandatory. To omit the script name, enter "".
- **keystrokes** is the body of the script—that is, all of the keys and key labels (listed below and on the next two pages) that the script performs when it is played back. You may have an unlimited number (except for buffer size—see *page 138*) of keystrokes in a script.
- {**Finish**} is the label that marks the end of an individual script in a scripts file.

  Line feeds and carriage returns in the file are ignored, so **keystrokes** can be as long as you need. **All other keys are part of the script.**

Special Learn Keys

The special Learn key names listed below are recognized during script playback.

{**^Alt-Del**}	Abort the Current Window.
{**Delay n**}	Wait for **n** seconds.
{**DESQ**}	Display the DESQview menu.
{**Display-Scripts**}	Display the Display Scripts menu.
{**Finish**}	Terminates script definition.
{**Fixed-Pause n**}	Pause until **n** characters are typed.
{**Learn** key "name"}	Start defining a new script (embedded learn).
{**Load-Scripts** "filename"}	Load the scripts file "filename".
{**Save-Scripts** "filename"}	Save scripts to the file "filename."
{**Switch**}	Switch to the next window in turn.
{**Variable-Pause**}	Pause until ↵ is entered.

Standard Keys and Extended Codes

The standard typewriter keys are entered into Learn scripts themselves. The standard PC extended key codes are entered into Learn scripts as the key name enclosed in curly brackets—as listed below.

Standard Keys and Extended Codes

Letters	Lowercase	**a** to **z**
	Uppercase	**A** to **Z**
	With Ctrl	**{^A }** to **{^Z}**
	With Alt	**{Alt-A}** to **{Alt-Z}**
Numbers	Alone	**0** to **9**
	With Alt	**{Alt-0}** to **{Alt-9}**
Symbols	Alone	. . ; : ’ “ / ‘ < > ? ! @ # $ ~ % \ & * + - = ^ ( ) [ ] { } | _
	With Ctrl	**{^ /} {^ [} {^]} {^^} {^ _}**
	With Alt	**{Alt- —} {Alt- =}**
Function Keys	Alone	**{F1}** to **{F10}**
	With Shift	**{Shift-F1}** to **{Shift-F10}**
	With Ctrl	**{^F1}** to **{^F10}**
	With Alt	**{Alt-F1}** to **{Alt-F10}**
Other Keys	Alone	**{BackSpace} {Left}** **{BackTab} {LineFeed}** **{Del} {Null}** **{Down} {PgDn}** **{End} {PgUp}** **{Enter} {Right}** **{Esc} {Space}** **{Home} {Tab}** **{Ins} {Up}**
	With Ctrl	**{^BackSpace} {^PgDn}** **{^Break} {^PgUp}** **{^End} {^PrtSc}** **{^Home} {^Right}** **{^Left}**
Keypad Keys	Numbers	**{Keypad 0}** to **{Keypad 9}**
	Symbols	**{Keypad +} {Keypad *}** **{Keypad -} {Keypad .}**

- ❑ To enter the { key alone, use **{{}**.
- ❑ The 255 ASCII codes can also be entered as **{1}** to **{255}**.
- ❑ Any scan code can be entered as a signed decimal number, **{-32768}** to **{32767}**. For example, you could enter the scan code 4E2BH (gray +) as **{20011}**.
- ❑ ASCII 0 is known as **{Null}**. You cannot enter it as **{0}** or **{^@}**.
- ❑ **{LineFeed}** is generated by pressing ^Enter.
- ❑ ‘ has special meaning to Learn (see page 53). You must press it twice to enter a single ‘.

Enhanced Keyboard Keys

The enhanced PC keyboard has additional extended key codes that are not available on regular PC, PC-XT, or PC-AT keyboards—as listed below.

Enhanced PC Keyboard Only

Symbols	With Alt	{Alt- . } {Alt- [} {Alt- , } {Alt-] } {Alt- ; } {Alt- \ } {Alt- ' } {Alt- ‘ } {Alt- / }
Function Keys	Alone	{F11} and {F12}
	With Shift	{Shift-F11} and {Shift-F12}
	With Ctrl	{^F11} and {^F12}
	With Alt	{Alt-F11} and {Alt-F12}
Other Keys	With Ctrl	{^Tab}
	With Alt	{Alt-BackSpace} {Alt-Esc} {Alt-Enter} {Alt-Tab}
Keypad Keys	Alone	{Center Cursor} {Keypad LineFeed} {Keypad Enter} {Keypad /}
	With Ctrl	{^Center Cursor} {^Keypad -} {^Del} {^Keypad *} {^Down} {^Keypad /} {^Ins} {^Up} {^Keypad +}
	With Alt	{Alt-Keypad Enter} {Alt-Keypad *} {Alt-Keypad +} {Alt-Keypad /} {Alt-Keypad -}
Cursor Pad Keys	Alone	{CursorPad Del}† {CursorPad Left}† {CursorPad Down}† {CursorPad PgDn}† {CursorPad End}† {CursorPad Up}† {CursorPad Home}† {CursorPad PgUp}† {CursorPad Ins}† {CursorPad Right}†
	With Ctrl	{CursorPad^Del} {CursorPad^Left}† {CursorPad^Down} {CursorPad^PgDn}† {CursorPad^End}† {CursorPad^PgUp}† {CursorPad^Home}† {CursorPad^Right}† {CursorPad^Ins} {CursorPad^Up}
	With Alt	{Alt-Del} {Alt-Left} {Alt-Down} {Alt-PgDn} {Alt-End} {Alt-Right} {Alt-Home} {Alt-PgUp} {Alt-Ins} {Alt-Up}

† Indicates keys that are understandable by programs *not* written for the enhanced PC keyboard.

Notes:

DESQview's Application Program Interface

> This appendix is intended to provide information for program developers. The reader is assumed to have a detailed understanding of such technical matters as how programs interface with DOS and the ROM BIOS and how to write assembly language programs.

DESQview comes with a built-in Application Program Interface (API). Using this API, you can write DESQview-specific programs that take advantage of DESQview's menu-building, mousing, context-sensitive Help, windowing, and multitasking capabilities.

This appendix provides an overview of DESQview's API and the technical information necessary to make a program DESQview-aware. Developers who wish to write DESQview-specific programs should contact Quarterdeck for additional information.

How to Write Programs for DESQview

Almost any DOS program can run without modification under DESQview. However, programs that are **misbehaved** in the way they get keys from the keyboard or write information to the video hardware inhibit some of the advantages of DESQview's operating environment. This appendix describes how you can easily modify an existing program to run efficiently in DESQview.

There are three types of programs, as far as DESQview is concerned:

- A **DESQview-oblivious** program is written without any consideration for DESQview. It is important, however, that the program not base anything on the assumption that it is the only program running on the computer. Eliminate any such assumption for the program to run in DESQview without crashing the system. Since most programs do not make this assumption, no modification is usually required to make a program DESQview-oblivious.
- A **DESQview-aware** program has been modified in minor ways to make it run efficiently in DESQview and concurrently with other programs. This generally requires you to add a dozen or so lines of assembly-language code. This additional code checks for DESQview's presence and, if DESQview is running, makes one or more calls to DESQview. If DESQview is not running, the program runs normally.
- A **DESQview-specific** program takes full advantage of DESQview's built-in API. This API allows a program to interact with DESQview and with the other programs running in DESQview.

You can tell DESQview to move, resize, hide, recolor, or retitle the program's window. You can create and manipulate subwindows. You can spawn subtasks that run concurrently with the main task. You can tell DESQview to allow, disallow, or notify you of various user actions. You can ask DESQview to process the input on the program's menus. You can send messages to and receive messages from other programs or subtasks of the program. And, you can use DESQview's mouse support.

When you incorporate API commands in a program, you generally make it DESQview-specific—in the sense that it will only run inside of DESQview. It will not (as a rule) be able to run directly under DOS. (Contact Quarterdeck for information on DESQview's API and the run-time version of DESQview available to software developers).

DESQview-Oblivious Programs

A **DESQview-oblivious** program is written without any consideration for DESQview. However, it must still observe the basic rule that it not be written on the assumption that it is the only program running on the computer. For a general description of what this means, see **Appendix H**.

In addition, there are a few other considerations to keep in mind to be sure a program runs at least as well inside of DESQview as it does outside of DESQview:

- DESQview runs programs concurrently—so, a program is not running all the time. All timing loops in the program should look in the BIOS area (at the double word at **40H:6CH**), or ask DOS, to find out how much time has elapsed, rather than grabbing the timer interrupt to increment a counter or using an instruction loop.

  Grabbing the timer interrupt will fail because, when other programs are running concurrently, the program will only get the timer interrupt during its time slice. So, it could be a number of seconds before you get a second's worth of timer interrupts. Using an instruction loop is bad, in general, because of the wide range of PC processor speeds. But, it is especially bad in DESQview because a program gets widely differing percentages of the processor's time.

- DESQview imposes some overhead in servicing an interrupt—so, if the program communicates with external devices, the communications interrupt should be very streamlined and should be very sensitive to not overflowing any buffer it is using (since it could be a second or more before the program gets to process the buffer). Also, to minimize our overhead in servicing an interrupt, DESQview may not restore every aspect of the program's state at hardware interrupt time. So, do not assume that you can make DOS or BIOS calls, or use other interrupts, inside of the interrupt handler.

  Also, you should **cascade** interrupts. By this we mean that, when your interrupt handler gets control, it should find out if any other program is also using this interrupt and, if one is, it should call the interrupt handler for this program to be sure it also gets a chance to service the interrupt.

  To avoid conflicting with other hardware-dependent programs running in DESQview, the program should not lock or mask out interrupts for long periods of time.

- DESQview emulates many DOS and BIOS functions—so, a program should not illegally poke information into DOS or the BIOS, and should also avoid using undocumented DOS and BIOS features (such as looking at data internal to DOS) or relying on undocumented quirks. Also, DESQview uses a bit more stack space than DOS or the BIOS, so you should not try to squeeze the program's stack size down to the absolute minimum that runs under DOS outside of DESQview.

- DESQview manages multiple programs that store data in expanded (EMS) memory—so, a program should always perform EMS functions using interrupt **67H** rather than by writing directly to the hardware. Also a program should ask for medium-sized blocks of EMS memory on demand rather than grabbing all of EMS memory at startup.

- DESQview manages multiple programs that store data in extended (XMS) memory, so a program should always perform XMS functions to allocate extended memory rather than BIOS functions. Also, a program should ask for medium sized blocks of extended memory on demand rather than grabbing all XMS memory at startup.

DESQview-Aware Programs

DESQview users do not just want their programs to run as well inside DESQview as outside; they want them to run even better. They want to use DESQview's Learn feature to make typing repetitive commands to the program easier—and DESQview's Transfer feature to move information from one program to another. They want their programs to print or do heavy processing in background while they continue to work in another program, in foreground. They want their programs, when idle, to avoid degrading the multitasking of the programs that are active. It is easy to modify a program to do all this.

For a program's users to be able to take advantage of DESQview's Learn and Transfer features, the program must get keystrokes from DOS or the BIOS. If the program reads the keyboard hardware to get keys, these features will not work—making the program less powerful than other programs in DESQview.

Programs that call DOS or the BIOS to move the cursor and display information on the screen run in a small window without modification. The user can use such a program while simultaneously viewing information for another program. More importantly, such programs will run in background without writing on top of the information displayed by the program that is running in foreground.

There is no good reason not to use the BIOS to move the hardware cursor, as these functions are easy to use and quite fast. However, both DOS and the BIOS are comparatively slow at writing to the screen, so many programs write directly to the screen memory for performance reasons.

Programs that write directly to the video buffer typically determine during initialization whether they should run on a monochrome or color monitor. They select a video segment at **B000H** for a monochrome or **B800H** for a color display. DESQview provides a new BIOS call that supplies the caller with an alternative video buffer address. A program can write into this buffer exactly as if it were the hardware video buffer. DESQview will automatically take care of displaying only the information that falls within the current window area.

The following code sequence checks for DESQview's presence and then requests the alternate buffer address:

```
 MOV ES, VIDEO_HARDWARE_SEG;set ES=video hardware segm
 MOV DI,   0              ; set DI to video hardware offset
 MOV CX, ’DE’             ; set CX to 4445H; DX to 5351H
 MOV DX, ’SQ’             ; an invalid date
 MOV AX, 2B01H            ; DOS’s set date function
 INT 21H                  ; call DOS
 CMP AL, 0FFH             ; did DOS see it as invalid?
 JE   NO_DESQVIEW         ; if so, DESQVIEW isn’t there
 MOV MAJOR_VERSION, BH ; Else, DV returns Version #
 MOV MINOR_VERSION, BL ; (no real need to store these)
; since DESQview is running, get the alternate
; screen buffer
 MOV AH ,0FEH             ; DV’s get buffer function
 INT  10H                 ; Returns ES:DI as alternate buffer
 NO_DESQVIEW:             ; Save resulting addr for later use
 MOV VIDEO_BUFFER_OFFSET, DI
 MOV VIDEO_BUFFER_SEG, ES
```

This code assumes that you have already determined whether you are on a monochrome or color monitor and have set either **B000H** or **B800H** into the **VIDEO_HARDWARE_SEG** variable. It then checks if DESQview is running. If it is, it makes a DESQview BIOS call to get the alternate video buffer address into **ES:DI**, and then finishes by setting the correct buffer address (either the original hardware address or the one DESQview provided) into the **VIDEO_BUFFER** variables.

If you are familiar with TopView's API, you will note that TopView supports an equivalent call to find an alternate screen buffer. TopView, however, requires that another call be made every time you write into the buffer to tell TopView that something has changed (the **0FFH** interrupt **10H** call). DESQview supports this call as well, but **does not** require it.

There is no need to synchronize with video retrace when writing into this buffer. DESQview will automatically synchronize when the information is written to the **real** screen. So, the program might actually update the screen faster inside of a small DESQview window than it does outside of DESQview.

Once you have added this code to the program (and converted to using the BIOS to manipulate the hardware cursor—if you were not doing so already), the program will run in a small DESQview window and users will be able to run the program in background without any problems.

However, there are still a few optimizations you can make to be sure the program multitasks as efficiently as possible—so that neither the program nor other programs running concurrently with it are needlessly degraded. There are three routines that you might want to add to the program to achieve this optimization:

- **DV_PAUSE:** If the program waits for input when it is idle, DESQview will not waste any processor time on it until the user types the next key. However, if the program sits in a loop polling the keyboard when it is basically idle, you will probably want to use the **DV_PAUSE** call to relinquish the remainder of your time slice when you see that the event you are polling for has not yet occurred. This minimizes the amount that the program's polling loop affects other programs running in background.
- **DV_BEGIN_CRITICAL:** This call is used in conjunction with the call **DV_END_CRITICAL** to define a section of code that DESQview will not "slice out of." Use this for timing critical operations.
- **DV_END_CRITICAL:** This call defines the end of the critical section of code.

These routines, and the two others listed below, are contained in the listing of the **DESQview Interfaces** module on the next page. This listing can be assembled with the IBM or Microsoft Assembler and then linked with the program. It should work as is when linked to Assembler or MS Pascal programs. It is not linkable, as is, to Turbo Pascal of Compiled BASIC—but can be easily adapted to these languages as well. Contact Quarterdeck if you need assistance.

The other two routines in this listing are:

- **DV_GET_VERSION:** Returns a zero if the program is **not** running under DESQview. Otherwise, it returns the current DESQview version number. If the program already uses DOS or the BIOS to write to the screen, you should call this routine (rather than **DV_GET_VIDEO_BUFFER**) when you initialize the program.
- **DV_GET_VIDEO_BUFFER:** Takes the hardware video segment on the stack and returns that segment (if DESQview is not present) or returns the segment of DESQview's alternate video buffer. You should call this routine when you initialize the program if the program normally writes directly to the video buffer.

DESQview Interfaces

This section contains a listing of all the routines needed to make a program DESQview-aware. Contact Quarterdeck for information on how to write a DESQview-specific program.

```
        TITLE   DESQview Interfaces
DVINT_SEQ  SEGMENT 'CODE'
    ASSUME CS:DVINT_SEG

    PUBLIC DV_GET VERSION
    PUBLIC DV_GET_VIDEO_BUFFER
    PUBLIC DV_PAUSE
    PUBLIC DV_BEGIN_CRITICAL
    PUBLIC DV_END_CRITICAL

IN_DV   DB 0

DV_GET_VERSION PROC FAR
; Returns in AH/AL the DESQview major/minor version
; numbers, and sets up the IN_DV variable for later
; use. Returns 0 in AX if DESQview is not there
    PUSH  BX
    PUSH  CX
    PUSH  DX
    MOV   CX,'DE'       ; set CX to 4445H; DX to 5351H
    MOV   DX,'SQ'       ; (an invalid date)
    MOV   AX,2B01H      ; DOS' set date function
    INT   21H           ; call DOS
    CMP   AL,0FFH       ; did DOS see it as invalid?
    JE    NO_DESQVIEW   ; if so, DESQview isn't there
    MOV   AX,BX         ; AH=major version; AL=minor vers
    MOV   CS:IN_DIV,1   ; Set internal variable used by
    JMP   SHORT  DVGV_X ; other routines
NO_DESQVIEW:
    SUB   AX,AX         ; Return no DESQview (version 0)
DVGV_X:
    POP   DX
    POP   CX
    POP   BX
    RET
DV_GET_VERSION  ENDP

DV_GET_VIDEO_BUFFER PROC FAR

; Takes the hardware video segment on the stack and
; returns that segment (if DESQview is not present)
; or DESQview's alternate video buffer in AX. Sets
; up the IN_DV variable for later use.
; Call this instead of DV_GET_VERSION if your
; program writes directly to video memory.
    PUSH  BP
    MOV   BP,SP
    PUSH  DI
    PUSH  ES
    MOV   ES,[BP+6]     ; Put the hardware segment into ES
    CALL  DV_GET_VERSION; Returns AX=0 if not in DESQview
    TEST  AX,AX         ; In DV?
    JZ    DVGVB_X       ; Jump if not
; Since DESQview is running, get the alternate
; screen buffer
    MOV   AH,0FEH         ; DV's get buffer function
    INT   10H             ; Returns ES:DI as alternate buffer
; DI is always 0000H (zero)
DVGVB_X:                  ; Return correct video buffer in ES:
    MOV   AX,ES
    POP   ES
    POP   DI
    POP   BP
    RET   2
DV_GET_VIDEO_BUFFER ENDP

DV_PAUSE PROC FAR
; This routine gives up the rest of your program's
; time slice. Takes no parameters and returns
; nothing.
    CMP   CS:IN_DV,1      ; Are we in DESQview?
    JNE   DVP_X           ; If not, nothing to do
    PUSH  AX              ; Else make the pause function call
    MOV   AX,1000H        ; This is the function code
    INT   15H             ; DESQview API Call
    POP   AX
DVP_X:  RET
DV_PAUSE ENDP

DV_BEGIN_CRITICAL PROC FAR
; This routine tells DESQview not to slice away
; from your program until you make a
; DV_END_CRITICAL call.
; Takes no parameters and returns nothing.
    CMP   CS:IN_DV,1      ; Are we in DESQview?
    JNE   DVBC_X          ; If not, nothing to do
    PUSH  AX              ; Else make the begin critical call
    MOV   AX,101BH        ; This is the function code
    INT   15H             ; DESQview API Call
    POP   AX
DVBC_X:  RET
DV_BEGIN_CRITICAL ENDP

DV_END_CRITICAL PROC FAR
; This routine tells DESQview that it is all right
; to slice away from your program again.
; Takes no parameters and returns nothing.
    CMP   CS:IN_DV,1      ; Are we in DESQview?
    JNE   DVEC_X          ; If not, nothing to do
    PUSH  AX              ; Else make the end critical call
    MOV   AX,101CH        ; This is the function code
    INT   15H             ; DESQview API Call
    POP   AX
DVEC_X:  RET
DV_END_CRITICAL ENDP

DVINT_SEG ENDS

    END
```

DESQview's External Device Interface

DESQview can issue informative messages to third party software in order for that software to monitor certain DESQview operations such as starting a task or swapping out a process. These messages can be useful for allocating/deallocating resources (e.g. memory) on a process by process basis, communicating with tasks running within DESQview, rescheduling tasks, etc.

DESQview permits this through the External Device Interface (XDI) - Quarterdeck's specification for communicating with external drivers.

These drivers may be implemented either as a DOS device driver (loaded by CONFIG.SYS), a Terminate and Stay Resident program (TSR) loaded before or after DESQview, or as a DESQview shared program (shared among several processes).

Within the XDI, there are 15 subfunctions that inform the driver what action DESQview has just performed or is about to perform.

XDI_CHECK_PRESENCE	Check for XDI driver presence
XDI_RESERVED_SUBFUNC	XDI driver custom subfunction
XDI_START_DV	DV System initialization complete
XDI_END_DV	DV System termination
XDI_START_PROC	Process creation
XDI_END_PROC	Process termination
XDI_START_TASK	Task creation
XDI_END_TASK	Task termination
XDI_SAVE_STATE	Task state save
XDI_RESTORE_STATE	Task state restore
XDI_KEYBOARD	Change of keyboard focus
XDI_PROCESS_DVP	Processing of DVP file complete
XDI_SWAPPING_OUT	Swap out of DV process
XDI_SWAPPED_IN	Swap in of DV process
XDI_FAILED_DVP	DV process creation failure

DESQview's XDI is fully documented in Quarterdeck's API Reference Manual. Contact Quarterdeck for full information on DESQview's XDI specification.

More about Virtualization (DESQview 386 only)

One of the most powerful features of DESQview 386 is its ability to virtualize programs that bypass DOS or the ROM BIOS screen I/O and write directly to the screen. When virtualized, such programs can be run in small windows and in background without interfering with other programs' screens. All graphics programs write directly to the screen as well as certain text based programs and programs with a graphical user interface. If you are in doubt as to whether or not a program writes directly to the screen, see ***page 258*** for a way to test this.

Virtualization is a process that intercepts video information before it reaches the hardware and stores it in a special buffer so it can be managed within a DESQview 386 window. When a program is virtualized, it can accept input, redraw or recalculate information, search, sort, paginate—or do other time consuming tasks in a small window and in background while you work in a foreground program. A virtualized program will not let its screen I/O interfere with any other program's display.

Virtualization, so called because it takes advantage of the 386 processor's virtual machine capability, can only be accomplished on a computer with that capacity. DESQview, and most other software as well, sees all 80386, 80386 SX and i486 chips as 386 processors. You must be running DESQview 386 2.01 or higher with QEMM version 4.2 or higher. If this manual came with the DESQview 386 you are running, you have the correct versions of both.

Virtualization requires that the following conditions be present:

- VGA, EGA, Hercules, CGA or Monochrome video adapter.

  Virtualization is not possible with non-standard video modes that DESQview has not been programmed to manage. CGA virtualization requires 4 text pages.

- Enough expanded RAM.

  There must be enough exPANDed memory available to hold the video information for a virtual window. A virtual text screen takes up only as much memory (in bytes) as there are places to display characters on the screen. For example, an 80x25 display takes 4000 bytes, or about 4K. Graphics windows, however, usually need from 128K to 256K. To be sure you have enough expanded memory available for virtualization, you may need to limit the amount of expanded memory used by a program. If the program is one of those that allocates all of the expanded memory it can find for itself, then no expanded memory will be available for virtualization. Expanded memory can be limited by specifying a value for **Maximum EMS/XMS/VCPI/DPMI (in K)** in the Change a Program menu for each program.

- Virtualize set ON in the program information file.

  If you enter **Y**, DESQview will virtualize both text and graphics, as necessary. If you enter **T**, the program will only be virtualized when in text mode. This means that when a program which runs in either text or graphics mode is run in text mode, it will not use the extra expanded memory necessary to virtualize a graphics screen. When the program switches to graphics mode, the window will not be virtualized when you have used the **T** option.

- **Writes text directly to screen** should be set ON (Y) in the Change A Program menu.

  Basically, this is a precautionary measure. If virtualization ever gets set to **N** for a text-based program which writes directly to the screen, when it is placed in a small window or in background, DESQview will freeze the program, preventing video bleed-through (unless **Runs in Background** is forced ON).

- A page frame for a graphics program.

  If it is a graphics program, the computer must have an EMS page frame. QEMM will usually allocate a page frame for you unless you ask it not to.

- The program must be in an alternate map.

  QEMM, by default, allocates no alternate maps for use by programs until DESQview starts. Then, DESQview uses one alternate map for itself. In addition, each program you run is allocated an alternate map. For virtualization to work there must be an alternate map available for each program you want to virtualize.

- If it is a graphics program, it must be running in **real** mode.

  DOS extended graphics programs, which run in protected mode, cannot be virtualized since only the Virtual 8086 mode has the capabilities of allowing the video area to be protected correctly. Text mode programs running in protected mode can be virtualized.

In general, if you have the right hardware and have installed DESQview 386 properly, everything necessary to virtualize will be in place. You need only turn **Writes text directly to screen** or **Displays graphic information**[†] ON and **Virtualize text/graphics** ON to implement virtualization. If you have problems virtualizing a program, check the other environmental conditions detailed above. Unless **all** the above conditions are satisfied, a program will not virtualize. If a program is not virtualized, then it will normally **not** be allowed to run in the background. Changing **Runs in background** to **Y** will allow a non-virtualized program which writes directly to the screen to run in background, but may also allow that program's video information to bleed through onto other programs' screens.

[†] In most cases you would set both ON (Y), however, if Virtualization is ON (Y or T), DESQview will assume that program writes text directly to the screen and only needs to be told whether or not to set aside the extra memory for a graphics screen.

Notes:

Using Windows 3 in DESQview and DESQview 386

DESQview and **DESQview 386** versions 2.3 and later support Windows 3.0 and 3.1. Windows 3.0 runs in both Real Mode and Standard Mode, however with the release of Windows 3.1, Microsoft discontinued support for Real Mode, so Windows 3.1 runs in DESQview in Standard Mode only. On an 80386 or better PC, Windows 3 support is completely automatic, requiring no special loader or parameters, providing QEMM is used as the memory manager.

On 80286 machines, Windows 3 requires a special loader, (W3-LOAD.COM) to operate in Standard Mode inside DESQview. The loader is automatically invoked when you choose the MS Windows 3 Std. DVP from the Add a Program Menu when installing Windows 3 to DESQview.

Real Mode Support

To start Windows 3.0 in Real Mode, install the MS Windows 3 Real selection from the Add a Program menu. If you try to use this DVP to start Windows 3.1, you will get an error. Use the MS Windows 3 Std. DVP for Windows 3.1.

Running in Real Mode, Windows 3.0 runs like any other large graphics program. On an 80386 with DESQview 386, Windows in this mode can be run in a small window and in background.

Standard Mode Support

Both Windows 3 and Windows 3.1 run in Standard Mode under DESQview. To start Windows 3 in Standard Mode, install the MS Windows 3 Std. selection from the Add a Program menu.

Running in Standard Mode, Windows 3 runs in foreground. However, since it writes directly to the screen from protected mode, the screen cannot be virtualized. Therefore, the MS Windows 3 Std. installation defaults to run full-screen only and only in foreground.

386 Enhanced Mode

DESQview 386 does **not** support Windows 3 enhanced mode. We believe this is not a major restriction since the running of DOS programs (the capacity given you by enhanced mode) is a major feature of DESQview.

Windows 3 386 enhanced mode is automatically supported by QEMM when you run Windows 3 outside of DESQview 386.

The DESQview Icon

A DESQview icon, featuring the red Quarterdeck Tri-sail, is on your Windows 3 desktop. You may have to move Program Manager out of the way to see it. This icon tells you that DVWINMON.EXE is running. DVWINMON improves DESQview's capacity to save and restore the Windows 3 graphics screen. If you prefer, you can click on the DESQview icon to bring up the DESQview menu instead of tapping DESQ.

Fine-Tuning the DESQview-Windows 3 combination

Users who want to make the most efficient use of their memory may want to consider making some changes from the defaults used in setting up both Windows and DESQview. The procedure for making these modifications varies somewhat, depending on whether you have installed DESQview 386 first or Windows 3 first.

When DESQview is Already Installed

Windows 3.1

- If you install Windows 3.1 after installing DESQview 386, Windows Setup detects the presence of QEMM and does not replace it. Similarly, on a 286 computer, Windows 3.1 Setup detects the presence of QRAM and QEXT and does not replace it. (Otherwise, Windows 3.1 places HIMEM.SYS in your CONFIG.SYS file.)
- Windows Setup inserts the program SMARTDRV.EXE in your AUTOEXEC.BAT file. This is Microsoft's disk caching software. It will operate correctly as loaded, however its default size tends to be rather large. If you are running programs which use expanded memory outside of Windows you may want to remove SMARTDRV.EXE or modify its size. (See *Microsoft's SMARTDRV.EXE*, below.)

Windows 3.0

If you install Windows 3.0 after installing DESQview 386, the Windows Setup program's default makes two changes to your CONFIG.SYS file which you may wish to modify.

- Windows Setup inserts the device driver, HIMEM.SYS, before the QEMM386.SYS driver. When QEMM loads, it can allocate all of the memory that is controlled by the HIMEM.SYS driver, so the presence of HIMEM.SYS is not a big problem.

  However, HIMEM.SYS does take 2.8K of conventional memory that QEMM cannot reclaim. Since QEMM provides all the features of HIMEM.SYS, you may want to avoid loading HIMEM.SYS altogether. You do this by selecting **Let you review & edit changes before modifications are made** from Windows Setup when you get to the menu which offers this option. Just edit out the line which contains the HIMEM.SYS driver from the Proposed CONFIG.SYS file. Or, you can remove the line from your CONFIG.SYS file at a later time.
- Windows Setup inserts the device driver, SMARTDRV.SYS, after QEMM386.SYS. This is Microsoft's disk caching software. It will operate correctly as loaded, however its default size tends to be rather large. If you are running programs which use exPANDed memory outside of Windows you may want to remove the driver or modify its size. (See *Microsoft's SMARTDRV.SYS*, below.)

When Windows 3 is Already Installed

DESQview 386's installation program looks for Windows on your system. If you are installing DESQview 386 after Windows 3 is already installed, DESQview's installation program replaces HIMEM.SYS with QEMM386.SYS in your CONFIG.SYS file.

Windows Setup also installs the disk cache, SMARTDRV. This is Microsoft's disk caching software. It operates correctly as loaded, however, its default size tends to be rather large. If you are running programs which use exPANDed memory outside of Windows you may want to remove SMARTDRV or modify its size. (See next topic.)

Microsoft's SMARTDRV.EXE or SMARTDRV.SYS

The Windows Setup procedure installs Microsoft's disk cache called SMARTDRV. The way SMARTDRV is installed differs from Windows 3.0 to Windows 3.1 but the effect is ultimately the same. The SMARTDRV that comes with Windows 3.1 is a program called SMARTDRV.EXE. Windows 3.1 installs SMARTDRV.EXE in your AUTOEXEC.BAT file. SMARTDRV.SYS, a device driver, comes with Windows 3.0. Windows 3.0 installs SMARTDRV.SYS in your CONFIG.SYS file.

The default size of this cache tends to be large. Windows can reclaim memory from this cache when it starts up, however programs that are run outside of Windows which use expanded memory cannot do this. If you run programs which use expanded memory outside of Windows, you may want to consider removing SMARTDRV from your system entirely, or at least reducing its size.

SMARTDRV.SYS takes parameters to set the size of the cache. While it is difficult to suggest a cache size that might be best for you, one possible suggestion might be to use the minimum amount only, which for both Windows 3.1 and Windows 3.0 is 256K.

If you are not running programs that are disk intensive, deleting the cache entirely might make sense. Further information on the parameters used to control the size of SMARTDRV can be found in the Windows 3.1 or Windows 3.0 manual.

QEMM-386 and Windows 3.0

Please see your QEMM manual for information regarding installing or reinstalling QEMM if you will be using Windows 3.0. You'll need to check the usage of the RAM parameter and special command line switches for using Windows 3.0 with DESQview and QEMM.

Troubleshooting Windows 3.0

You should increase the amount of expanded memory allocated to Windows if you are experiencing trouble. You do this by increasing the number in the **Maximum EMS/XMS/VCPI/DPMI** field on the second Change a Program Screen.

It is best to allocate enough expanded memory in the Windows DVP to run all your Microsoft Windows programs in one session of Windows under DESQview.

If, after you open Windows 3.0 inside DESQview, you try to open other programs and receive error messages like **Cannot find file XX-PIF.DVP**, increase the number of DOS files allocated with the FILES=xx statement in the CONFIG.SYS file.

If you encounter video difficulties when running Windows 3.0 in a high-resolution mode inside DESQview, try increasing the number of Graphics Pages allocated on the second screen of the Change a Program menu for Windows 3.0. In some cases, you may have to use the Windows Setup program to set Windows' video resolution to a mode that DESQview can support.

In addition, many video cards use the B000-B7FF area when they go into 1024x768 resolution. If your copy of Windows 3 is configured to use your video card's 1024x768 resolution, you may need to prevent your expanded memory manager from making the B000-B7FF region available. Alternatively, you can prevent DESQview from using this area by starting DESQview with the command line parameter /X:B000-B7FF.

- **To start DESQview with the "/X:B000-B7FF" parameter, you would type DV /X:B000-B7FF**
- **Then Press ↵.**

Of the two choices, it is preferable to exclude with a memory manager rather than DESQview, if possible, because if DESQview should not use that area of memory, then nothing else should, either.

Even with this precaution, DESQview cannot always support the 1024x768 modes of all video cards. 800x600 is a more common video mode for DESQview to support, but this too depends upon the video card's implementation of that mode.

Using DESQview with DOS 5 or 6

There are several considerations with respect to running DESQview and DOS 5 or 6.

- **Use of DOS=HIGH command**. When you add DOS=HIGH to your CONFIG.SYS file, DOS appropriates the first 64K of extended memory (called the High Memory Area, or HMA). DOS uses this area to store part of its code and DOS buffers, at a savings to the user of about 45K of conventional memory. To get maximum DOS program size outside of DESQview, we normally recommend that you use DOS=HIGH.

  Because only one program can access the HMA, you must decide whether to put DOS or another program in the HMA. One other program that uses the HMA is DESQview, which is able to store 64K of its code in the HMA if it is available. So if you spend most of your computing time inside DESQview, it may be better to let DESQview, not DOS, use the HMA.

  However, if you are using DESQview 386 with its Stealth ROM detection feature, you should experiment with configuring your PC using DOS=HIGH. Depending upon the number of TSRs and device drivers you have, this configuration may give you the greatest amount of memory available for DOS programs.

- **Use of DOS's HIMEM.SYS.** DESQview includes among its many functions an extended memory manager, QEXT.SYS. QEXT has the same capabilities as DOS's HIMEM.SYS. You should not use HIMEM.SYS if you use QEXT.SYS.

- **Use of DOS's EMM386.** EMM386 is DOS's expanded memory manager for 80386 and i486 PCs. On 80386 and i486 processors we recommend that you use DESQview with QEMM. Using QEMM you most frequently have more upper memory area (memory between 640K-1024K) available to load TSRs, device drivers, and DESQview. In addition, DESQview users who run with EMM386 will commonly observe smaller window sizes in DESQview, less access to expanded memory in which to run multiple programs, and a diminished ability to run programs in background or in small windows without video conflict.

- **Use of DOS=UMB.** The DOS=UMB command is only necessary if you plan to use DOS's LOADHIGH and DEVICEHIGH to load TSRs and device drivers in the upper memory area. We recommend that you use Quarterdeck's QRAM, QEMM or QEMM-50/60 to manage your PC's high memory. Because QRAM and QEMM's LOADHI can "Squeeze" more programs into smaller spaces, and can be automatically configured, we suggest you use their LOADHI and do not specify DOS=UMB. However, if you do specify the DOS=UMB statement in your CONFIG.SYS file, QEMM and QRAM and their auxiliary programs will function properly anyway.

- **Use of DOSKEY.** DOS's DOSKEY command line editor and macro program must be reloaded inside each DESQview window in which you wish to use it.

- **Use of the DOSSHELL Task Swapper.** If you run DOS's DOSSHELL inside DESQview, you should not enable the DOSSHELL Task Swapper; use DESQview instead to run programs in different memory partitions. If you run DESQview inside the DOSSHELL Task Swapper, DESQview will suspend the Task Swapper's ability to switch away from DESQview as long as DESQview is running.

- **Use of QEMM 7 DOS-Up technology.** DESQview generally—but not always—uses the HMA more efficiently than DOS, so we usually recommend taking DOS=HIGH out of your CONFIG.SYS file. However, you can still load parts of DOS above conventional memory using QEMM 7's DOS-Up technology to make more memory for bigger DESQview windows. Refer to your QEMM manual for full details, but basically:

- **In the QEMM subdirectory, type QSETUP ↵.**
- **Press ↵ again to go to the Setup Menu.**
- **Type U to select Enable or disable DOS-Up.**
- **Select P for Partial.**
- **Type H to toggle DOS=HIGH off.**

Complete QSETUP and run OPTIMIZE to change your configuration.

Glossary

access code: A telephone number or **modem** command to dial prior to dialing the actual telephone number itself.

add-on board: A board containing electronics hardware that you plug into your computer to add additional features.

address space: The range of memory addresses that the **processor** can reference. PCs running in **real mode** have an address space of 1 megabyte. **ExPANDed memory** can only be referenced after it is mapped into the **processor's** address space.

alternate maps: Sometimes called Real Alternate Maps, a facility provided by EMS4 add-on memory boards which allows the fastest memory mapping.

assigned key: A key which, when pressed, plays back a DESQview **script.**

Auto Dialer: A DESQview feature that automatically dials your telephone, if you have a modem installed in your computer.

backfill: Any **conventional memory** which is not on your PC's motherboard, but instead supplied by an add-on memory board. If the memory board is an EMS 4 or EEMS card, then backfilling allows those cards to map that part of the conventional memory area. Note that 80386 expanded memory managers, such as **QEMM**, can map all of conventional memory without backfilling.

background task: A program running in a window other than the **current window.**

BIOS: The Basic Input Output Systems software which provides low level, basic functionality to your PC. The software is embedded in one or more **ROMs** in the **upper memory area.**

BUFFERS: A **CONFIG.SYS** statement that defines the number of disk buffers placed by DOS in memory to enhance disk operations. Each buffer uses about 528 bytes of memory. Increasing the number of buffers tends to speed up file operations at the cost of decreasing available memory.

click: The action of pressing down and releasing a button on the **mouse.**

command line switch: A word or symbol on a command line which follows the name of the executable program file and specifies a certain command or option to the program.

COMMAND.COM: The standard command processor used by DOS. This is the program which displays the DOS prompt and processes DOS commands (COPY, DIR, etc.).

CONFIG.SYS: The file which defines the initial configuration of DOS. It typically specifies the number of **DOS resources** to be allocated and the **device drivers** to be loaded.

conventional memory: The contiguous memory starting at 0K used by DOS to run programs. This is usually 640K in size.

coprocessor: An optional auxilliary **processor** used to speed up complex math operations.

Ctrl-Break key: The key that, in most cases, aborts the current DESQview command or script in progress.

current window: The DESQview term referring to the window in which you are currently working.

DESQ button: The button on the **mouse** that interrupts a program and displays the DESQview menu.

DESQ key: The key which, when pressed and released, interrupts a program and displays the **DESQview menu**. By default, this is the Alt key.

DESQview menu: A screen display that indicates which DESQview commands are available at a particular time. The master list of DESQview commands.

DEVICE: A **CONFIG.SYS** statement that tells DOS to load an add-on **device driver** at startup.

device driver: A piece of software used to communicate with an installed hardware device (such as a printer, video adapter, disk drive or memory card).

DOS Extender: Software that allows programs to use **protected mode** while running under DOS. Running in protected mode allows programs access to the larger **address space** of the 80286 and 80386 processors. Among the large applications which are now using DOS extenders are Lotus 1-2-3 Version 3 and Paradox 386.

DOS Resource: The blocks of memory allocated by DOS to keep track of its various resources, such as **BUFFERS** and **FILES**.

DPMI: Another DOS Protected Mode Interface, developed since **VCPI**, which provides even more protection for multiple programs running in **protected mode**.

EMS: Abbreviation for ExPANDed Memory Specification.

exPANDed memory: A type of memory that permits data to be stored and (possibly) programs to be run above the normal 640K memory limit for IBM PCs.

extended memory: memory addressed above 1024K (one Megabyte).

FILES: A **CONFIG.SYS** statement which specifies the maximum numbers of files which can be open simultaneously.

fill-in field: An area on a **DESQview menu** where information of a specific type—for example, a file name—is entered.

foreground task: The program running in the **current window.**

full-screen window: A **window** that occupies the entire screen.

High Memory Area: The area, as defined by **XMS**, from 1024K to 1088K, the first 64K of **extended memory**. It is the only exTENDed memory that can be accessed directly by DOS programs.

High RAM: Portions of the **upper memory area** into which **RAM** has been mapped. **Device drivers** and **TSRs** may be loaded in High RAM to minimize **conventional memory** overhead.

HMA: See High Memory Area.

K: The abbreviation for kilobyte, equal to 1024 bytes of memory.

Keyboard buffer: The place where the **BIOS** stores keystrokes as they are typed.

keystroke macro: See script.

Learn: A command that tells DESQview to memorize a sequence of keystrokes that you wish to assign to a key.

Learn key: A keypress, Shift-Alt by default, that displays the **Learn** menu.

LOADHI: Two programs included with Quarterdeck's **QRAM** and **QEMM** products to load programs into **High RAM**. The LOADHI.COM program loads **TSRs** and **DOS resources** into the **upper memory area**, while the LOADHI.SYS program loads device drivers into the **upper memory area.**

mappable: Describes a portion of the **address space** through which **expanded memory** can be accessed.

mapped key: See assigned key.

MB: the abbreviation for Megabyte. A Megabyte is equal to 1,024K or 1,048,576 bytes of memory.

modem: A device that you attach to your computer which permits your computer to make and receive telephone calls.

mouse: A pointing device that controls a second cursor (the mouse cursor) on the display screen. When you move the mouse on a hard surface, the mouse cursor moves in a corresponding direction.

mouse cursor: A second, diamond-shaped, screen cursor which appears when a mouse is used with DESQview.

network adaptor: A hardware card that provides the interface between your **processor** and a local area network. This hardware often reserves portions of the **upper memory area** for its own use.

option: A menu entry that lets you select (turn ON) or deselect (turn OFF) a particular DESQview feature.

page frame: An **EMS** term describing the **mappable** area, 64K in size, which is the place that almost all EMS programs use for mapping. Other mappable regions are only used by programs written specifically for EMS4 or EEMS.

parallel ports: Hardware ports used for communication with parallel devices, such as printers, accessed through I/O addresses stored in the BIOS data area.

processor: The chip which controls your PC, usually either an 8086, 8088, 80286, 80386, 80386SX or i486.

Protected Mode: The mode of the 80286, 80386 or i486 processor which allows all of extended memory to be accessed directly. Normally, DOS programs cannot be run in protected mode. However, programs that use a **DOS extender** can run in protected mode while still maintaining compatibility to DOS.

protocol: The set of commands that a **modem** uses to dial the telephone.

Put Aside: The DESQview command that temporarily removes a **window** from the screen and swaps its associated program out to disk, RAM disk, or expanded memory—thus freeing up the memory used by that program.

QEMM: Either of two Quarterdeck products—QEMM-386 or QEMM 50/60. Each includes an EMS4 driver and utilities to load **TSRs, device drivers** and **DOS resources** into the **upper memory area**.

QEXT: Quarterdeck's ExTENDed memory manager for 80286 PCs. Versions 5.0 and above support the XMS memory specification. Previous versions only supported DESQview's use of the **High Memory Area.**

QRAM: The Quarterdeck product which enhances other vendor's EMS4 or EEMS drivers by providing utilities to load **TSRs, device drivers** and **DOS resources** into the **upper memory area.**

RAM: Random Access Memory. This is the memory in your computer into which programs and data may be loaded. Its contents are lost when power is turned off. It is distinct from **ROM** in that the contents of RAM can be changed.

Real Mode: The processor mode common to all Intel microprocessors and the only mode directly supported by DOS. In real mode, only the first megabyte of memory is addressable.

ROM: Read Only Memory. This is memory that is fixed in content and cannot be changed. The contents of ROM are not lost when power is turned off. The programs contained in ROM are responsible for controlling your hardware.

reverse video: A way that text is displayed in which the text and background colors are reversed.

Script: A sequence of keystrokes you have instructed DESQview to memorize.

select button: The left-most button on the mouse. It is used to select commands on DESQview menus, move and resize windows, switch between windows, and mark information to be transferred.

serial ports: Hardware ports used for communication with serial devices such as **modems**, accessed through I/O addresses stored in the **BIOS** data area.

snapshot: An exact image of the full screen that DESQview creates so you can mark information to be transferred to another program.

swap out: To temporarily store a program on disk because memory is needed to open a new **window** in DESQview.

TSR: A Terminate and Stay Resident program (memory resident program). Such a program initializes itself, hooks up to system resources it wants to monitor (for example, the keyboard interrupt, so that it can "pop up" later) reserves some memory for itself, and then returns to the DOS prompt. Quarterdeck's LOADHI.COM program can load **TSRs** into the **upper memory area.**

upper memory area: The area between the end of **conventional memory** (usually 640K) and 1024K reserved for use by system hardware, such as the system ROM, video and other adapters. The upper memory area should not be confused with the **XMS** term, **High Memory Area.**

VCPI: Virtual Control Program Interface. This is a programming specification created by Quarterdeck Office Systems and Phar Lap Software to allow DOS extended programs to run when loaded after a virtual 8086-mode expanded memory manager such as QEMM-386. Without VCPI, **DOS extenders** would be incompatible with these expanded memory managers.

video adapter: The hardware and **ROM** software that controls the video display characteristics—usually either monochrome, CGA, EGA, VGA or Hercules.

virtualization: The process by which DESQview 386 runs programs that write directly to the screen in small windows and in background on an 80386 PC. This may be set ON or OFF for any program.

window: How a program running in DESQview is viewed and where all DESQview work is done. Several windows and, therefore, several programs, can be viewed on the screen simultaneously.

XMS: The Extended Memory Specification created to allow DOS programs to utilize **High RAM** and **extended memory**, including the **High Memory Area.**

Zoom: A DESQview command that enlarges the **window** in which you are working to a full screen window, or shrinks it back to its previous, smaller window size and position, if it is already full screen.

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